WEST DEALER ISSUE
Pages 9-16

Croplife®

FOR RICHER FIELDS

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL MANUFACTURER, FORMULATOR AND DEALER

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World Nitrogen Consumption Gains 13% in 1954-55

Production Rises 14%, According to British Federation

LONDON — World production and consumption of nitrogen is continuing to maintain the upward trend evident in recent years. During 1954-55, total production increased by 14% compared with the previous year, and consumption was upped 13%. This shortfall in consumption, compared with the production increase, has resulted in an increase in world inventories.

These figures have been revealed by the British Sulphate of Ammonia Federation in its 35th annual report and refers to the 58th year of public relations work undertaken by the Federation in association with Nitram, Ltd., and Imperial Chemical Industries, Ltd.

Total world production is shown as 7,947,800 metric tons with consumption set at 7,790,500 tons. The

(Continued on page 21)

Big Expansion Is Planned for IMC's Phosphate Plant

BARTOW, FLA.—A multi-million dollar expansion program, expected to double the production capacity of its Bonnie plant near here has been announced by Louis Ware, president of International Minerals and Chemical Corporation. The Bonnie plant is the major unit of the corporation's Phosphate Chemicals Division and manufactures triple superphosphate and feed grade dicalcium phosphate.

International has appropriated four million dollars for the first step in this program which is to include a second sulfuric acid plant and new equipment for the neutralization and recovery of plant effluents. When this expansion is completed, the Bonnie plant will be able to produce 500,000 tons of product annually, Mr. Ware said.

President Advocates Soil Bank As Part of New Farm Program

By JOHN CIPPERLY
Croplife Washington Correspondent

WASHINGTON—President Eisenhower last week sent to Congress a farm message in which he advocated adoption of a "soil bank" plan as the major weapon to bring production in balance with mountain-high surpluses of wheat, cotton, rice and corn.

The administration is recommending the authorization of $350 million in new money for the soil bank plan during the coming year.

This would be used as a cash payment encouragement for farmers to take marginal field crop lands out of production. This fund would be in addition to the current and annual appropriation of $250 million for agricultural conservation payments (ACP).

Obscured in the President's recommendations to Congress was another proposition that the national legislature consider poundage and bushelage controls over production of field crops under price support.

This aspect of the executive message was buried in the soil bank feature, a proposition which has been previously adopted and discarded by earlier administrations. It was originally recommended by Republican controlled congresses in the 1920's, passed by congress but vetoed.

The soil bank plan, as recommended by Mr. Eisenhower, provides for federal checks for farmers who do one of two things:

(1) Voluntarily reduce their production of wheat, cotton and rice—and possibly corn—below the acreage allotments now set by the U.S. Department of Agriculture or by legislative mandate.

(2) Take out of field crop production marginal land, dust-bowl land, hilly and other land, which USDA economists say never should have been plowed up except for extreme emergencies.

The first part, which the President referred to as the acreage reserve program, is aimed at the nearby problem, to halt further buildup of surpluses.

It is aimed even at the current crop of wheat, part of which is now in the ground. Its first targets are the wheat and cotton crops. It is a voluntary program under which farmers would extend their reduction of acreage for those crops beyond the acreage limitations now imposed.

For such voluntary further reduction, the farmers cooperating would

(Continued on page 17)

National Weed Group Elects W. B. Ennis, Hears Reports on 1955 Tests, New Miller Law

NEW YORK — W. B. Ennis, Jr., U.S. Department of Agriculture agronomist with the Field Crops Research Branch, Agricultural Research Service, and also Mississippi State College, was elected on Jan. 5 president of the Weed Society of America for a two-year term.

Mr. Ennis, whose election took place during the charter meeting of the society here Jan. 4-5, succeeds R. H. Beatty, American Chemical Paint Co., Ambler, Pa. (Report of first day of meeting in Jan. 9 Croplife, page 1.) Mr. Beatty served as president during the one-year interim period while the society was being organized.

Newly elected vice president was A. S. Crafts, University of California, Davis. W. C. Shaw, Field Crops Research Branch, Agricultural Research Service, U.S. Department of Agriculture, Beltsville, Md., was renamed secretary.

W. C. Jacob, University of Illinois, Urbana, was appointed by the executive committee to the newly designated post of treasurer and business manager of the society's publication, "Weeds."

The next meeting of the society was announced for Jan. 13-15, 1958, at the Hotel Peabody, Memphis, Tenn., with the Southern Weed Conference as host.

L. L. Danielson, Virginia Truck Experiment Station, Norfolk, was elected president of the Northeastern Weed Control Conference at the regional group's 10th annual meeting on Jan. 6. Mr. Danielson succeeds John D. Van Geluwe, G.L.F. Soil Building Service, Ithaca, N.Y.

C. L. Hovey, Eastern States Farmers' Exchange, West Springfield, Mass., was named vice president. R. J. Aldrich, Field Crops Research

(Continued on page 20)

Inside You'll Find

Over the Counter 9
What's New 10
Oscar and Pat 12
Bug of the Week 14
Field Notes 16
World Report 18
Editorials 22
Meeting Memos 23
Index of Advertisers 23

Grover L. Bridger Heads ACS Fertilizer Division

NEW YORK—Dr. Grover L. Bridger, Davison Chemical Corp., division of W. R. Grace & Co., has been elected 1956 chairman of the Division of Fertilizer and Soil Chemistry of the American Chemical Society. He succeeds George H. Serviss, GLF Soil Building Service, Ithaca, N.Y.

Dr. Stacy B. Randle, New Jersey state chemist, was named vice chairman of the ACS division, and Dr. Kenneth G. Clark, U.S. Department of Agriculture, Washington, was elected secretary.

Establishing a Tolerance Under Appeal Procedure

By WALTER C. SMITH
Croplife Editorial Staff

The Food and Drug Administration established, effective Sept. 29, 1955, a residue tolerance of one part per million for the Naugatuck Chemical division, United States Rubber Co., miticide Aramite on 19 fruit and vegetable non-fodder crops. Establishment of the tolerance was the first FDA ruling to be based on Miller Amendment appeal procedures.

A review of Naugatuck Chemical's petition by a five-man advisory committee became necessary when FDA indicated to the manufacturer that its original petition dated in February, 1955, for a residue tolerance of five parts per million was being rejected and that a zero tolerance was to be established. FDA based its action on the contention that toxicological data submitted with the petition did not show a noninjurious level in rat feeding tests.

The toxicological data presented by Naugatuck Chemical consisted of one-year animal test results on which evidence FDA had issued in 1953 final label approval for use of Aramite on 25 crops, including ornamentals as one group. The present requirement of two-year animal tests was put into effect after that time.

Lack of data on Aramite concentrations between zero and 500 parts per million was described in

(Continued on page 4)

EDITOR'S NOTE—Because the recent establishment of a tolerance of one part per million on the acaracide Aramite was the first Food and Drug Administration ruling to be based on the appeal procedures of the Miller Amendment, details of the circumstances surrounding this decision bear unusual significance.

To bring before the trade a step-by-step history of how the tolerance of 1 ppm was finally reached after FDA had earlier set a tolerance of zero, Croplife assigned Walter C. Smith of its editorial staff, to delve into the facts and present them in a report.

Material presented herewith was obtained from files of FDA and through the cooperation of personnel from the Naugatuck Division of U. S. Rubber Co., producer of Aramite.

Big Yields Push 1955 Crop Production Close to 1948 Record Output, USDA Reports

WASHINGTON — Crop production in 1955 almost equalled the 1948 record and considerably surpassed the total for any of the past six years, according to the annual U.S. Department of Agriculture crop production report.

Production was generally good, crop by crop and area by area, with some notable exceptions. The combined acreage of principal crops harvested was smallest since 1940, but generally high yields per acre more than offset acreage reductions.

Index comparisons for production and yields furnish a quick summary view of results of farmers' 1955 production efforts. The indexes used are based on 1947-49 averages which are represented at 100.

Using this standard, the 1955 total production of all the crops included in this summary reaches 105.4. This is only slightly below the 1948 peak of 106 and exceeds 1954 at 101 and 1953 at 103.

Outstanding in significance is the index of over-all yield which at 117% of the 1947-49 base is record high by a wide margin. The previous record yield year was 1948 with an index of 107.8, followed closely by 1954 and 1953. The 1955 yield index for 18 principal field crops as a group reached 117.5, far surpassing any other year.

New high individual crop production totals were attained for oats, soybeans, hay, alfalfa seed, sorghum silage and oranges. Second largest crops of record were produced for barley, sorghum grain, and rice. Many other crops had above average out-turn, including corn, flaxseed, sorghum forage, cotton and cottonseed, sugar beets, dry beans, rye, sweet clover seed, lespedeza seed, broomcorn, grapes, cherries, apricots, avocados, lemons, cranberries and walnuts.

Wheat, both winter and spring, fell nearly a fifth below average. Other crops much below average were dry peas, cow peas, sweet potatoes, buckwheat, sugar cane sirup, peaches, pecans and tung nuts.

An unusual number of crops made record or near record yields per acre in 1955. New record yield averages were attained by oats, spring wheat, rice, cotton, hay, tobacco, sugar cane for sugar, sugarcane for sirup, sorgo sirup, sugar beets, potatoes, sweet potatoes and velvet beans.

Winter wheat matched the former record set in 1952 after heavy acreage loss in areas which have below average yields. Peanut yields were second high. Corn yields ranked third of record even after severe late summer damage in western Corn Belt areas. The large number of record yields scored by crops prominent in southern states emphasized the relatively good season and cultural advances in this area.

In view of the considerable weather reverses which reduced crop outturns in different sections in 1955, it appears that factors other than extremely good weather must have been in operation to produce unusually high yields, USDA says.

These include improvements in crop varieties, increased fertilizer use, expansion of irrigated acreage and advances in control of plant insects and diseases. Modern power equipment also further increased farmers' remarkable capacity to get work done when it counts most. Altogether, the year's large production outcome gives new evidence of farmers' productive skill and resourcefulness.

The 1955 harvested acreage total for 59 crops of 333 million acres is 5.4 million acres less than in 1954 and the smallest in 15 years. Largest acreage reductions from 1954 were in winter wheat, down 5.5 million acres, spring wheat 1.6 million acres, cotton 2.4 million, oats for grain 1.4 million annd rice 0.7 million.

Largest increases from 1954 were in all sorghums, up 2.8 million acres, soybeans up 1.6 million, hay 1.3 million and barley 1.1 million. Except wheat, all of these crops, whether increased or decreased in acreage from 1954, nevertheless, had record or near record production in 1955.

The 355 million acres of crops planted or grown in 1955 was only a half million acres less than in 1954 and 3.4 million acres or about 1% below average. Reductions below the 1954 level were made in wheat, cotton, rice, tobacco, sugarbeets and corn—all of which where under allotment programs. Increases which in total largely offset these decreases were made in hay, all sorghums, soybeans, oats, barley, rye, potatoes, sweet potatoes, dry field peas, peanuts and broomcorn.

Willamette Valley Dealers to Meet

PORTLAND, ORE. — A day-long Willamette Valley fertilizer dealers' meeting will be held Jan. 18 at Oregon State College, Corvallis, under co-sponsorship of the Pacific Northwest Plant Food Assn. and the OSC extension service.

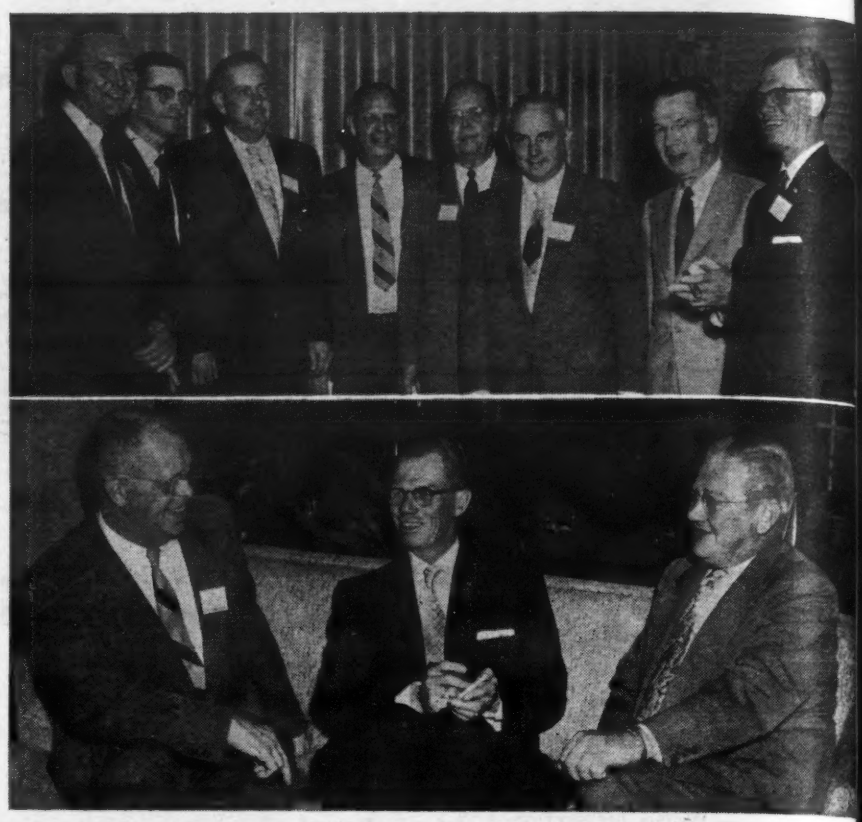
All Pacific Northwest retail fertilizer industry members are invited to hear the program which will be of an educational nature and slated towards the dealer trade.

Dr. Horace B. Cheney, Oregon State college soils department head will highlight the session with a discussion on "What Is the Basis of Fertilizer Recommendations?" Other talks will explain Oregon State College's soil testing program, lime and efficient use of fertilizers, fertilizer recommendations for pastures, for sweet corn and pole beans and grass seed crops.

Final USDA Estimate of 1955 Crops

Crop and unit—	Acres harvested (thousands) Average 1944-53	1954	1955	Production (thousands) Average 1944-53	1954	1955
Corn, all, bu.	84,675	80,369	79,955	3,080,115	3,010,248	3,184,836
Wheat, all, bu.	67,656	54,279	47,322	1,154,073	984,846	938,159
Oats, bu.	39,556	42,291	40,933	1,323,321	1,497,045	1,575,736
Soybeans for beans, bu.	11,987	16,971	18,559	238,488	341,565	371,276
Barley, bu.	10,329	13,183	14,247	266,918	370,502	390,969
Rye, bu.	1,740	1,717	2,066	21,097	24,320	29,187
Flaxseed, bu.	3,373	5,589	4,922	35,898	40,808	40,638
Sorghum grain, bu.	7,180	11,218	12,597	134,582	216,086	232,638
Sorghum forage, tons†	5,302	5,703	6,730	7,093	6,186	7,847
Sorghum silage, tons‡	708	1,164	1,574	4,436	6,646	8,563
Cottonseed, tons	....	....	....	5,260	5,709	6,043
Rice, bags*	1,761	2,542	1,822	39,357	64,216	53,420
Cotton, lint, bales	22,096	19,251	16,882	12,952	13,696	14,663
Hay, all, tons	74,328	72,710	73,984	102,199	104,987	109,697
Beans, dry, bags¶	1,628	1,557	1,567	17,317	18,916	18,768
Peas, dry, bags¶	389	269	292	4,764	3,941	2,793
Peanuts picked & threshed, lb.	2,562	1,394	1,685	1,921,095	1,024,780	1,610,450
Potatoes, bu.	1,967	1,408	1,407	401,146	356,031	381,631
Sweet potatoes, bu.	496	344	357	46,951	30,131	38,406
Tobacco, lb.	1,734	1,667	1,510	2,098,738	2,243,813	2,256,087

*Bags of 100 lb. †Dry weight. ‡Green weight. ¶Bags of 100 lb. (uncleaned).



AT TEXAS CONFERENCE—Leaders of the fertilizer industry from Texas get together for a talk during the Texas Fertilizer Conference. They are, from left, top photo, Ivan Gilliland, International Minerals and Chemical Corp., Fort Worth; Tom Wright, Texas Farm Products, Nacogdoches, Texas; Mike Wells, Armour Fertilizer Works, Dallas; Dr. J. F. Fudge, state chemist and conference chairman; James D. Dawson, Jr., Fidelity Chemical Corp., Houston; N. D. Morgan, American Potash Institute, Shreveport, La.; J. E. Adams, dean of the Texas A&M School of Agriculture, and B. L. Hendersen, Campbell Fertilizer Co., Houston, president of the Texas Plant Food Educational Society. In the lower photo, Dr. Fudge, left, and Mr. Henderson, center, are shown in a huddle with Sherman Clark, Texas Gulf Sulphur Co., Houston, secretary of the society.

BEST THING THAT EVER HAPPENED

Value of Soil Tests Stressed At Texas Fertilizer Meeting

COLLEGE STATION, TEXAS — "You ought to get every one of your customers to have his soil tested," Frank Boyd told more than 160 members of the fertilizer industry at Texas A&M College recently. "Soil testing is the best thing that ever happened to us."

Mr. Boyd is agronomist for the Virginia-Carolina Chemical Corp. and president of the Alabama Soil Fertility Society at Montgomery, Ala. He was one of the final speakers during the annual Texas Fertilizer Conference, sponsored by the Texas A&M College System.

Under the title, "Fertilizer Grades and Ratios" he discussed the overall fertilizer picture in view of common practices, and recommended a closer fitting of supply to the actual needs of the farmer.

Using East Texas soils as an example, he said that 48% of the soils need an even phosphorus-potash mixture; 43% need a mixture high in phosphorus and low in potash, and 9% need one low in phosphorus and high in potash.

Sales during 1955, however, were: 22% matched-content mixtures; 77% were high in phosphorus and low in potash—and only 1% was low in phosphorus and high in potash. "No wonder the customer says 'you're not making the fertilizer as good as you used to'," he said.

The industry should operate on a three-way basis, he said. The experiment stations tell the kind of fertilizers needed; soil-testing laboratories tell how much of each the farmer needs—and industry should follow through and match his supply to his need.

Reporting on the fertilizer outlook for 1956, James D. Dawson, Jr., of the Fidelity Chemical Corp., Houston, said, "The growing demands of consumers and the efforts of producers to fill them during 1955 show that we can have prosperity without inflation. Right now it looks as though the only shortage in the fertilizer industry during 1956 will be a shortage of box-cars and tank-cars."

During the two-day meeting the group heard reports of researchers from the Texas Agricultural Experiment Station, describing their research and findings.

F. M. Eaton, plant physiologist, U.S. Department of Agriculture, described some of his work in using fertilizers to off-set salt in soil or irrigation water.

Flake L. Fisher of the Texas Station described his work with Coastal Bermuda in which up to 1,300 lb. of N were applied on plot tests. Mr. Fisher also discussed requirements of soils for secondary and trace minerals and elements.

D. R. Paterson of the horticulture department at the college showed the group results of tests on tomatoes in which sulphur was added to the regular fertilizers provided for tomatoes.

C. O. Spence of the Extension Service and Experiment Station at Sherman, Texas, spoke on fertilizer experiments with cotton — and stressed the care which he takes in releasing information so that every farmer who uses his recommendations will profit by them. Lack of such care can set the fertilizer program back as much as 15 years in some areas, he said.

O. J. Moss, Agricultural Stabilization and Conservation Committee, told the group: "Our state committee appreciates the cooperation of the fertilizer industry very much. Your advice to us has been invaluable. You are a part of this program; only as you share in it can we progress."

Others who appeared on the program included Dr. J. E. Adams, dean

(Continued on page 23)

mory D. Burgess eads USDA Plant est Control Work

WASHINGTON—Emory D. Burss has been appointed chief of the ant Pest Control Branch of the S. Department of Agriculture, it s announced recently by Dr. Byron Shaw, administrator of the depart-nt's Agricultural Research Ser-ce.

Mr. Burgess, who has been assist-t chief of plant pest control work nce 1954, succeeds Dr. W. L. Pop-m as branch chief. Dr. Popham was cently made director of crop reg-atory programs for the department. ee page 2 of the Jan. 9 issue of roplife.)

In his new position, Mr. Burgess ill direct cooperative programs or control or eradication of such ative insects as the grasshopper nd Mormon cricket, foreign pests uch as the golden nematode, hapra beetle and Mexican fruit fly nd plant diseases such as black tem rust of wheat, phony-peach isease and peach mosaic.

He will supervise technical as-tance furnished to foreign coun-es by the department for control locusts (grasshoppers) and other sects. His branch is also respon-ble for registering pesticides and gulating their labeling. The branch's eekly cooperative economic insect rvey report lists the abundance and stribution of harmful insects.

Mr. Burgess was born at Reading, ass., and holds a B.S. degree from e University of Massachusetts and M.S. degree from Ohio State Uni-rsity in entomology. He has been sociated with USDA intermittently nce 1924. His early work for the partment was in control of the psy moth, and he was for a short ne associated with the state of w York on Dutch elm disease con-l. He also spent several years of search on problems concerning the ropean corn borer and the Jap-ese beetle.

Mr. Burgess served as an entomol-ist in the Sanitary Corps, U.S. my, during World War II. He was scharged from active military ser-e with the rank of lieutenant lonel in 1946. He engaged in state-deral gypsy-moth control work at eenfield, Mass., until 1950, when was brought to Washington to as-t in supervision of pest control erations in the Department's for-r Bureau of Entomology and Plant arantine.

alifornia Aerial pplicators to Meet

LONG BEACH, CAL. — The sixth nual convention of the Agricultural rcraft Assn., Inc., will be held at e Wilton Hotel here Jan. 26-28. e program will include talks on fety, training, insect control pro-ams, distribution of granular pesti-es, regulations and other topics.

regon Counties Designated nt Control Areas

PORTLAND, ORE. — Jefferson, schutes and Crook counties of egon have been designated a mint-trol area to protect the section's t industry from insects, plant dis-es and noxious weeds. Oregon's partment of Agriculture estab-ed the control area at the request mint growers and after public rings in each county.

he controls are aimed at wilt, and nematode disease organisms strawberry weevils, mint flea tles and common symphilids. Out-ed weeds include yellow nut grass, rning glory, quack grass, Canadian tle, white top, Russian knapweed Bermuda grass.

Pacific Northwest Agricultural Chemical Conference Planned

PORTLAND—About 200 persons are expected to attend the third annual Pacific Northwest Agricultural Chemical Industry Conference, to be held Jan. 18-20 at the Imperial and Benson hotels here. The conference is being sponsored by the Western Agricultural Chemicals Assn.

The Jan. 18 program includes a session with the Pacific Northwest Vegetable Insect Conference in the morning and a panel discussion of the Miller Amendment in the afternoon.

On the panel will be Dr. H. S. Telford, State College of Washington; Walter Leth, Blue Lake Packers; G. Wallace Rynerson, Food and Drug Administration; Delyan W. Dean, U.S. Department of Agriculture; L. R. Gardner, California Spray-Chemical Corp., and C. O. Barnard, executive secretary, Western Agricultural Chemicals Assn., moderator.

The Jan. 19 program will include a panel discussion on symphilids with Dr. A. G. Howitt, Western Washington Experiment Station, H. E. Morrison, Oregon State College, and Charles H. Starker, Pacific Supply Cooperative, moderator; a talk on weed control by J. R. McCambridge, Chipman Chemical Co., and a discussion of safety and pesticide control by Mr. Barnard.

The Jan. 19 afternoon program will include reports on "What About Insect Resistance?" by Dr. Paul O. Richter, Oregon State College; "Fungicides and Fungicide Testing," Dr. R. A. Young, Oregon State College, and "Nematode Problems in the Pacific Northwest," Dr. W. D. Courtney, U.S. Department of Agriculture.

On the morning of Jan. 20 the group will meet with representatives of the Northwest Cooperative Spray Project.

South Carolina Group Plans District Meetings

COLUMBIA, S.C. — The South Carolina Plant Food Educational Society will hold four district meetings this month "to reach as many agricultural interests as possible with the latest developments in the agricultural field affecting their local communities, the state and the nation as a whole."

Conferences are scheduled at Clemson Jan. 24, Columbia Jan. 25, Florence Jan. 26, and Holly Hill Jan. 27. All meetings are at 7 p.m.

Also announced by J. R. Fulton, secretary-treasurer, was the society's annual corn contest luncheon in Columbia Feb. 15, at which winners will receive prizes donated by plant food industries in the state.

Annual convention of the society will be held Sept. 6 at the Clemson House, Clemson, Mr. Fulton announced.

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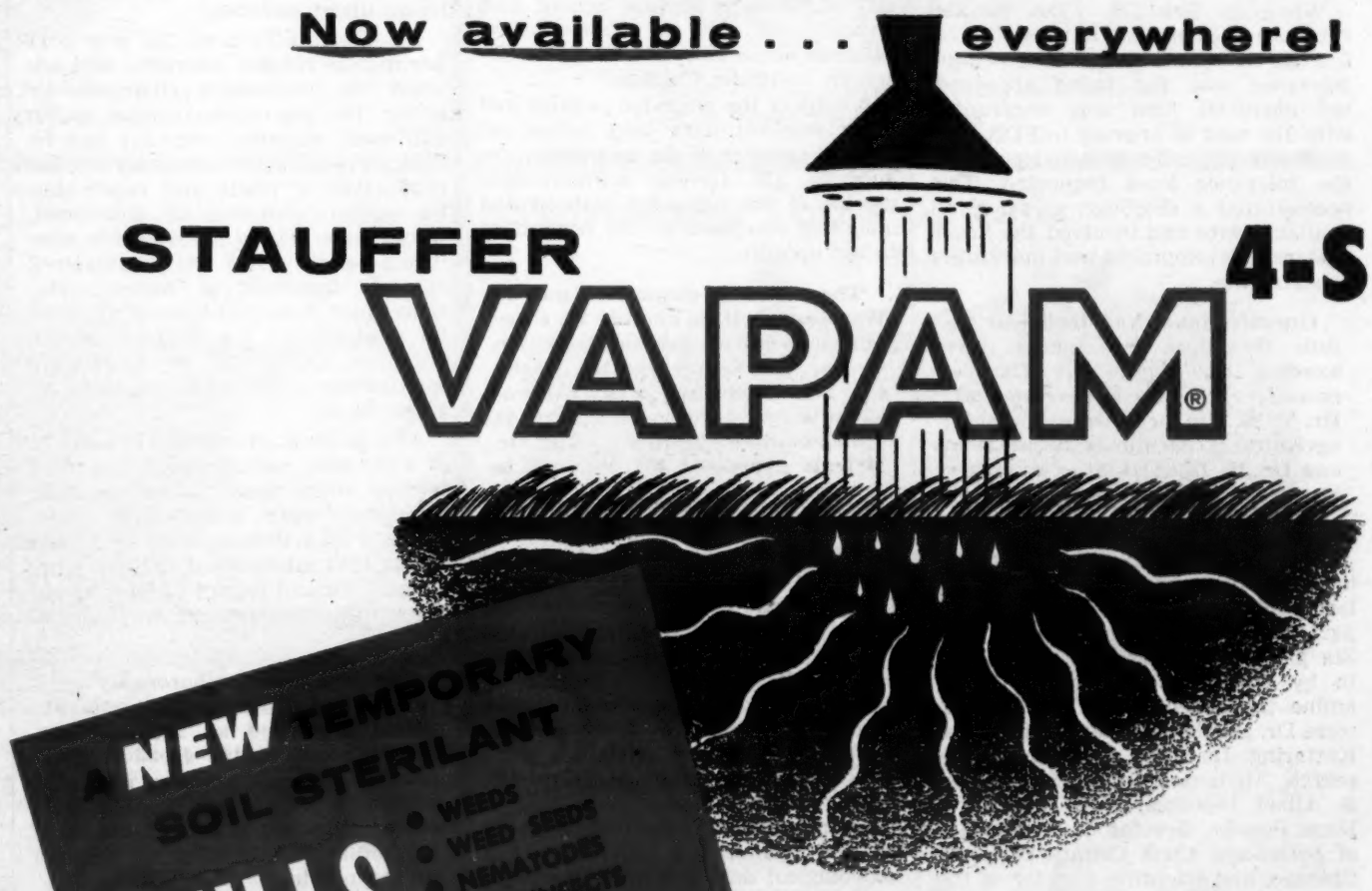

One easy application of Stauffer Vapam 4-S and the soil is free of virtually all subsoil pests and diseases. No special equipment or ground covers are necessary, for water-soluble Vapam 4-S is simply watered into the soil. In two or three weeks it dissipates, and you plant! The remarkable efficiency and application ease of Vapam 4-S has opened markets everywhere for this new development of Stauffer Research.

Nurserymen are using Stauffer Vapam 4-S to produce weed-free and disease-free seed beds for vegetables and ornamentals. Growers of ornamentals are using pre-plant field treatment for ornamentals and producing spectacular yield and quality where soil disease has been a problem. Turf gardeners find that renovating infested turf without rebuilding — or treating new lawn seed beds — is easy, for with Stauffer Vapam 4-S *acres* can be treated in a day!

Stauffer Vapam 4-S (a 4-pound-per-gallon water solution of Vapam) is available in 1, 5, 30, and 55-gallon containers. Talk with your local Stauffer office for details.

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ARAMITE TOLERANCE

(Continued from page 1)

the advisory committee's report as the "central and, in effect, the only issue in this case." The petitioner was "absolved of negligence" because no necessity for an experimental design which would reveal "neoplasia" could be predicted when Aramite was released in 1953.

The committee stated that it did not wish "to leave any impression that their recommendation in this case for the establishment of the tolerance of one part per million for Aramite should create a precedent for inadequate experimental design and it therefore recommends to manufacturers that substances proposed for possible incorporation into foods, or which might leave residues on foods, be tested over a wide enough range of concentration in advance of marketing to determine with clarity the feeding levels at which no injury can be demonstrated."

When on Feb. 24, FDA notified Naugatuck Chemical that its petition for the five parts per million residue tolerance was not being approved, the chemical firm was confronted with the task of proving to FDA that no deleterious effects would occur at the tolerance level requested. This necessitated a thorough study of all available data and involved the firm's research, development and marketing departments.

Organizational and technical details for filing the appeal were handled by Martin G. Tierney, manager, commercial development; Dr. T. W. Brasfield, sales manager, agricultural chemicals department; and Dr. H. Douglas Tate, manager of agricultural chemicals research and development.

The immediate concern was deciding the nature of a microscopic liver lesion observed in one rat fed 500 parts per million Aramite in the diet. Six pathological experts were called in by Naugatuck Chemical to examine tissue sections. These experts were Dr. Stephen S. Sternberg, Sloan-Kettering Institute for Cancer Research, Memorial Center for Cancer & Allied Diseases, New York; Dr. Hans Popper, director of department of pathology, Cook County Hospital, Chicago, and scientific director of the Hektoen Institute for Medical Research; Dr. Bernard L. Oser, Food Research Laboratories, Inc., New York; and Dr. Morris Rakieten, director, Dr. Reuben Cares and Dr. Benjamin Gordon of the South Shore Analytical Research Laboratory, Islip, N.Y.

Tissue sections examined by the pathologists were not identified as to whether they came from treated or untreated rats. This procedure was followed to insure a complete, individual and unbiased diagnosis by each examiner.

Satisfied with the reports submitted by the independent pathologists, Naugatuck Chemical officials reviewed the application level recommendations for Aramite on the crops concerned. It was found that a residue tolerance of one part per million was high enough to provide a wide safety factor without affecting the miticide's effectiveness.

The petition was amended to the one part per million tolerance in place of the five parts per million originally requested. No changes were made in the crops designated in the first petition. These crops were apples, blueberries, cantaloupes, celery, cucumbers, grapefruit, grapes, green beans, lemons, muskmelons, oranges, peaches, pears, plums, raspberries, strawberries, tomatoes, watermelon and sweet corn used for kernels rather than for fodder.

Naugatuck Chemical submitted its amended petition to FDA on May 26 with a request for a review of the petition by an advisory committee as provided in the Miller Amendment if FDA maintained its initial position that a zero tolerance should be established.

Upon filing of the petition on June 3, FDA upheld its previous decision and asked the National Academy of Sciences on July 1 to recommend suitable authorities to serve as members of the advisory committee. The committee was named "FDA Advisory Committee to Consider Aramite."

Those recommended for the committee by the National Academy of Sciences and appointed by FDA on July 13 were Dr. H. S. N. Greene, Yale University School of Medicine, New Haven, Conn., who served as chairman; Dr. L. W. Hazleton, Hazleton Laboratories, Falls Church, Va.; Dr. R. L. Metcalf, University of California College of Agriculture, Riverside; Dr. M. H. Seever, University of Michigan Medical School, Ann Arbor; and Dr. A. Tannenbaum, Michael Reese Hospital, Medecal Research Institute, Chicago.

A copy of the amended petition and other relevant data were submitted to each member of the committee. On July 15, Dr. Greene acknowledged receipt of the amended petition and indicated readiness of the committee to act upon it.

The advisory committee met in Washington, D.C., on July 27. Committee members present were Dr. Greene, Dr. Seever and Dr. Hazleton. The viewpoints of Dr. Tannenbaum were relayed by telephone to the committee chairman, while Dr. Metcalf expressed his opinions in a letter.

Principal concern narrowed to medical definition of the controversial rat liver lesion. Pharmacological extrapolation or interpolation of the data was agreed upon as a sound procedure with regard to all observations, with possible exception of carcinogenic potential. On the latter point, the committee questioned individually Dr. A. A. Nelson of the Food and Drug Administration, Dr. Popper and Dr. Oser.

Several specific points were noted by the committee. Although the toxicological data submitted by Naugatuck Chemical did not include concentrations between zero and 500 parts per million, a dosage gradient was believed apparent with regard to tumor and nonspecific toxicity between indicated levels of 1,580 and 5,000 parts per million. It was pointed out that no similar lesions were found in the livers of dogs at any feeding level.

FDA's Division of Pharmacology was held not consistent in the scientific thinking which served as the basis for its request that a zero tolerance be established for Aramite.

The advisory committee's report cited an April 6 memorandum as stating, in effect, that FDA recognized the fact there was a safe concentration of Aramite on raw agricultural products and had placed the practical level at somewhat less than one-tenth that which had been requested in the petition. Also noted was a memorandum of a Feb. 8 FDA conference reported by W. B. Rankin, assistant to the commissioner of FDA, which stated that chronic toxicity of substances such as DDT and methoxychlor had "been studied so thoroughly that it is possible to state with a great degree of certainty a level below which they will not cause harm."

On March 11, the Division of Pharmacology had advised Mr. Rankin that it could not recommend that any known carcinogen be used on human food.

The information contained in the memorandums, together with other information made available to them and within their own knowledge, indicate to the committee that "there was no specific experimental program which could be relied upon in its entirety to evaluate the carcinogenic potential of chemicals for man under different conditions of exposure." The committee felt that the principal problem with regard to the evaluation of Naugatuck Chemical's product was whether or not a noncarcinogenic feeding level had been established for rats.

Dr. Nelson told the committee that the Pharmacology Division of FDA had found no gross evidence of tumors in rats fed Aramite at 1000 parts per million and 200 parts per million after 53 weeks.

The committee chairman felt that Dr. Popper's wide experience gave much weight to Dr. Popper's interpretation of the questionable rat liver lesion in that it biochemically more nearly resembled normal tissue than would neoplastic tissue resemble normal. Dr. Oser advised interpolation to a completely no-effect level would be feasible despite the nature of the lesion under question.

Dr. Metcalf favored the one part per million residue tolerance and advised the committee chairman by letter. He described Aramite as an extremely valuable acaracide and he said its use was a mainstay in the production of fruits and vegetables. Its sudden removal, he contended, would have caused considerable confusion and would have rendered obsolete hundreds of recommendations from state and federal agencies for mite control. Dr. Metcalf pointed out that there was no completely satisfactory substitute available in many cases.

Also pointed out by the University of California entomologist was that factors other than "sober scientific decisions" were involved in overruling FDA's decision. He expressed a fear that misdirected "yellow journalism" without regard to facts would place the committee in an unfavorable light.

The committee thoroughly reviewed and discussed all pertinent points presented at the meeting before reaching its decision that continued use of Aramite at a residue level on raw agricultural commodities not to exceed one part per million would offer no hazard to the public.

Safety of the product had to be evaluated by general classification with other chemicals of similar type on which more extensive data were available because the data on Aramite were not adequate. This led the committee to issue its recommendations to manufacturers for testing such substances over a wide enough range of concentration in advance of marketing to determine precise feeding levels at which no injury can be demonstrated.

Noted by the committee was the fact that pharmacologists of FDA had indicated that some finite amount such as less than .1 part per million could be considered pharmacologically zero. Therefore, allowance of a one part per million tolerance was considered a matter of very fine distinction.

In handing down its recommendations, the committee reported that on a whole diet basis, a one part per million tolerance would provide considerably more than a hundredfold margin of safety between the tolerance and the level which would reasonably be expected by extrapolation of available data to cause injury to animals. In addition to this margin of safety, the committee report noted the added margin between Aramite-treated components in the diet and the total diet.

Allowance of the one part per million residue tolerance for Aramite was held to be consistent with past actions with regard to establishment of tolerances for pesticide chemicals on raw agricultural commodities under the Miller Amendment and represented, the report said, a judgement based on sound pharmocological principles.

Recommended by the committee was the utilization of "demonstrated injury" as a criterion of toxic levels for "so-called weak carcinogens" as with other chemicals not shown to produce such effects until evidence is presented which refutes basic principles. The report said that the use of extrapolation or interpolation of dose-response data with these agents would be acceptable as reasonable assurance of safety since those concentrations below which no injury is demonstrable would, by analogy, be considered to be non-carcinogenic levels.

The committee's report and recommendations were submitted to FDA commissioner George P. Larrick on Aug. 29. FDA was requested to advise Naugatuck Chemical to secure acceptable data on chronic toxicity and carcinogenicity of Aramite at feeding levels between zero and 500 parts per million in the mouse, rat and dog. Also, that the whole problem be reviewed by that or another committee in 1957 "when further laboratory and other data are available, even though in the meantime the law provides specifically for revocation of any tolerance."

FDA's action one month later in establishing the residue tolerance for Aramite concluded what one Naugatuck Chemical official termed "a friendly disagreement." He said that FDA was "very fair and helpful, and appeared anxious to get an opinion on it." While expense figures were not disclosed by the firm, it was indicated that costs were "considerable."

Some concern has been expressed over combatting wrong impressions that may result from what Dr. Metcalf previously described as "misdirected yellow journalism." There is a fear that numerical values set as residue tolerances lend themselves to misinterpretation.

While a lower tolerance may indicate the material is more poisonous, FDA points out that it is only partly the case. The agency defines the numerical tolerance as meaning "the limit the residues may be present without violating the law."

FDA emphasized that all factors should be taken into consideration. These, in addition to toxicity of the compound in question, include how many sources in which the compound will appear in the daily diet, what amount is needed to control infestations, how it is used, when it is applied, amount not likely to be exceeded in application and consideration of its necessity as being useful.

Harold S. Kendall, Dow Executive, Dies

MIDLAND, MICH.—Funeral services for Harold S. Kendall, 62, assistant to the president of the Dow Chemical Co. since 1941, were held in Midland, Jan. 10. Mr. Kendall died at his home in that city Jan. 8 after a long illness. Burial was in Midland.

Associated with the company since 1917, Mr. Kendall at the time of his death was a member of the company's finance committee and secretary of the Midland Division operating board. He was a director of Brazos Oil & Gas Co., a subsidiary, until its recent merger with Dow.

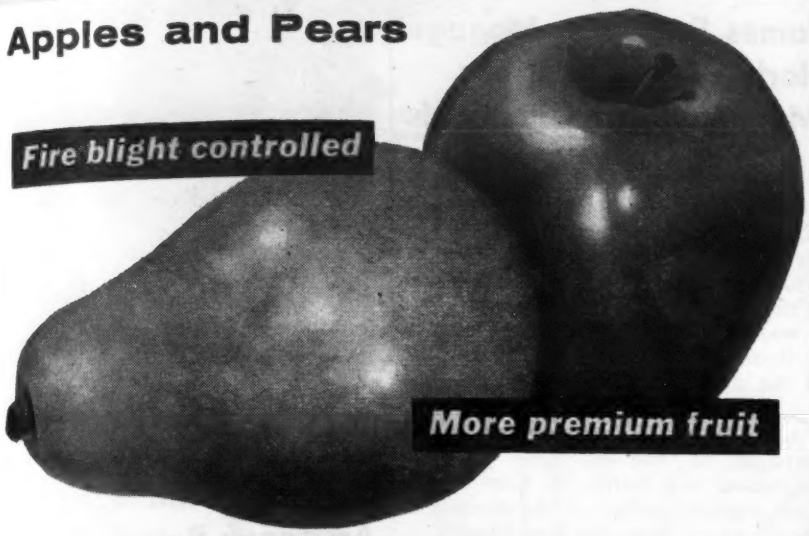
A native of Marienville, Pa., Mr. Kendall was born April 14, 1893. He received a B.S. degree in science from Grove City College, Grove City, Pa., in 1913 and a B.S. in chemical engineering from Case Institute of Technology, Cleveland, in 1917.

FARM LAND LEASED

URBANA, ILL.—Nearly 60% of the farm acreage in Illinois is being operated under lease in 1955, according to economists at the University of Illinois.

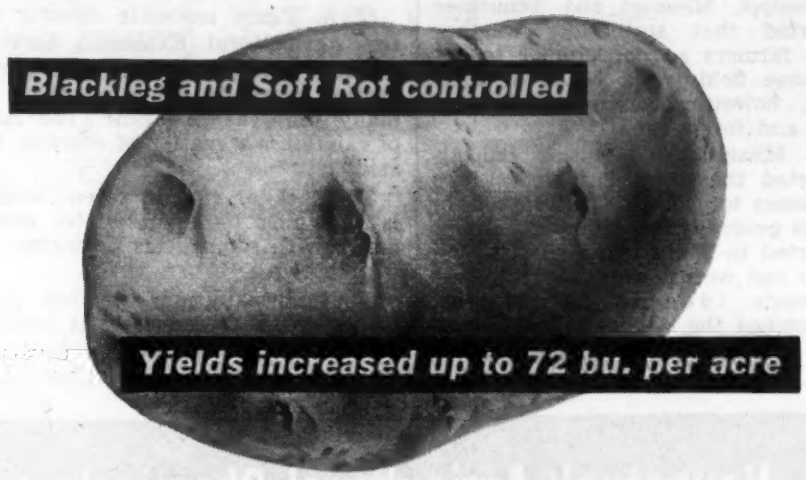
NEW ANTIBIOTIC SPRAY GIVES 2-WAY CROP PROTECTION, 2-WAY BENEFITS

Apples and Pears



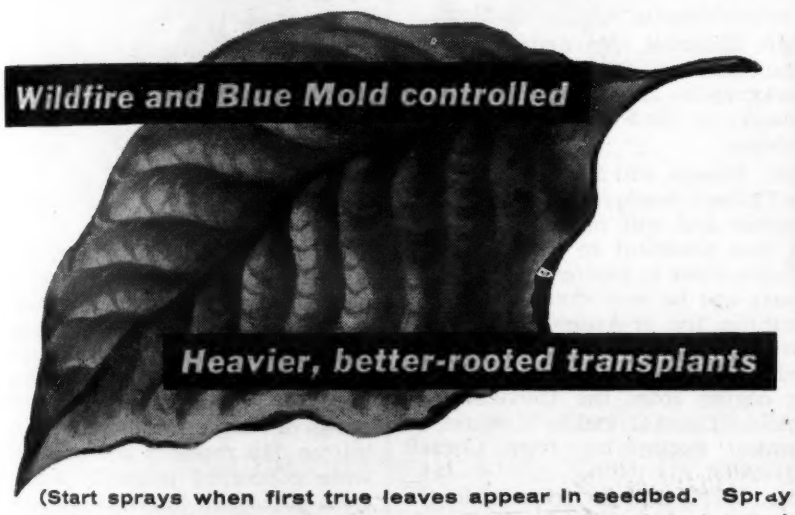
(Spray trees every 3 to 5 days during blossom time. 50 ppm for apples, 30 ppm for pears)

Potatoes



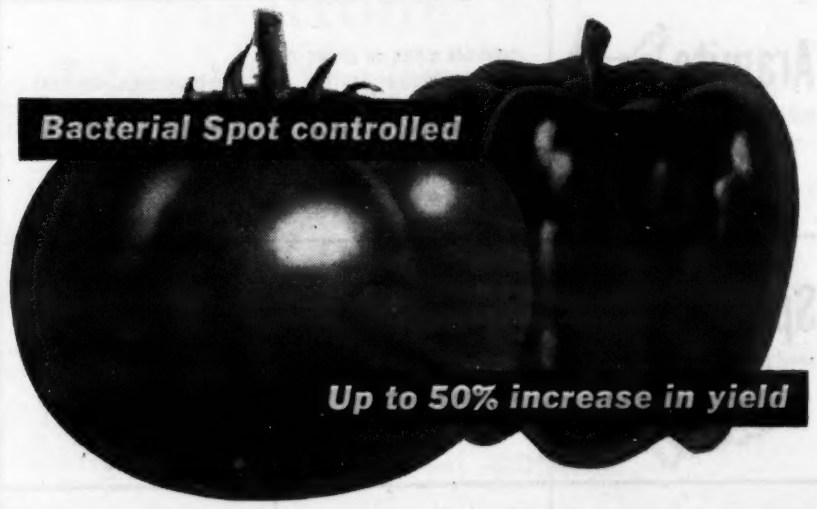
(Soak cut seed pieces in 100 ppm solution for approximately 1 minute)

Tobacco



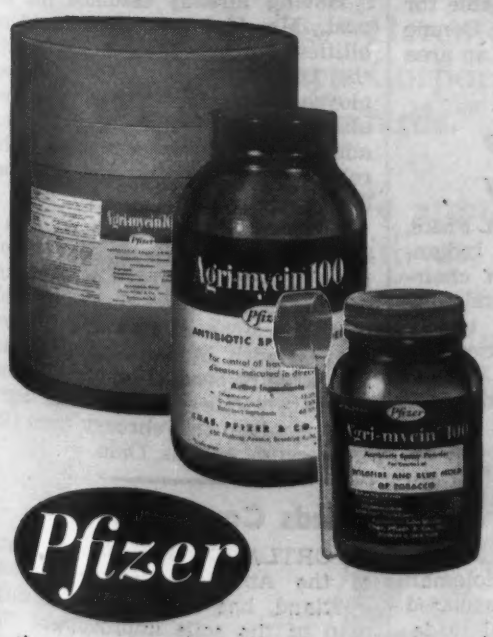
(Start sprays when first true leaves appear in seedbed. Spray plants with 200 ppm solution every 5 days until fruit is formed)

Tomatoes and Peppers



(Start sprays when first true leaves appear in seedbed. Spray plants with 200 ppm solution every 5 days until fruit is formed)

Agri-mycin* CONTROLS DISEASE INCREASES YIELDS



These results, from controlled experiment station tests with cooperating growers, show how the extra yield at harvest time can pay many times over the small cost of protecting plantings against destructive outbreaks of bacterial plant diseases this spring.

The bigger yield from Agri-mycin-treated plots is also of *better quality*. Larger fruit, with far less spotting, scarring or cracking brings a higher price per pound or per bushel.

Agri-mycin is the *only* antibiotic plant spray containing both streptomycin and Terramycin®. The Terramycin serves a three-fold purpose. Through synergistic action it actually increases the effectiveness of the streptomycin. It promotes healthy, vigorous plants, thereby increasing yield. It gives orchards and plantings more lasting protection against disease by retarding development of resistant strains of the causitive organisms.

Write for further information. Just tell us what crop or crops you are interested in.

Chas. Pfizer & Co., Inc.
Dept. C1-17
Brooklyn 6, N. Y.

Pfizer

Agri-mycin is now available from regular suppliers of agricultural spray materials in 9.34 oz. jars which make up to 330 gallons of spray. Economy size 25 lb. drums save the large orchardist or grower 20%. A popular priced small 2.4 oz. jar is also available for tobacco growers' seedbed protection.

*Pat. pending

®Terramycin Brand of Oxytetracycline

Chas. Pfizer & Co., Inc.
Dept. C1-17, Brooklyn 6, N. Y.

Please rush me full information on Agri-mycin and name of distributor in my area.

Name_____

Address_____

City_____ State_____

Major crops interested in_____

Land Preparation Off to Good Start In Mid-South States

MEMPHIS — Fires, planning and income taxes are keeping farmers in the Mid-South busy early in the New Year as they keep one eye on Washington watching pending farm legislation.

Extension officials in Arkansas, Mississippi, Missouri and Tennessee reported that spring-like weather gave farmers an opportunity to get in some field work. Much of their time, however, was spent fighting field and forest fires.

In Mississippi, extension officials reported the danger of woods fires continues to grow as the weather remains generally dry. Many fires were reported in Delta areas. Extra high grass and weeds, resulting from last summer's ideal growing season, heightened the danger, officials said.

In some areas the fire situation has reached the critical stage, according to M. W. Montfort, assistant extension forester.

Continued sunny weather brought about an increase in land-breaking for planting row crops and in preparation for planting home gardens.

East Arkansas farmers broke out in a flurry of plowing, taking advantage of clear weather and getting ready for the spring planting season.

C. A. Vines, associate director of the Agricultural Extension Service in Little Rock, said more land preparation work is going on than in many years at this time. The lack of rainfall is a matter of concern, he said.

The lack of rain in recent weeks is beginning to affect winter cover crops, with some fields beginning to turn brown.

The unusually dry weather prevailing in West Tennessee is helping farmers put final efforts into harvesting but it is a little too dry for winter cover crops.

T. W. Hillsman, Madison County agent, reminded strawberry growers they should not delay in mulching this year's crop. The straw or other material to be used should be placed on the beds as soon as possible so the berries will be clean and ready for top quality grading, he said.

Naugatuck Agricultural Chemicals

product	application	advantages
Aramite® miticide	controls mites on citrus and deciduous fruits, cotton, other row crops, ornamentals and vine crops. Also controls poultry mites.	non-hazardous, low cost per acre, highly compatible, harmless to natural predators.
Spergon® seed protectant	controls soil fungi and storage insects (with DDT) on most crop and vegetable seeds.	effective at economical dosages, safe on seed, easy to use, compatible with most other chemicals including legume inoculants, low cost.
Phygon®-XL fungicide	controls fungus diseases on fruit trees and row crops.	extremely low cost per acre, easy to apply, compatible, harmless to pollen and bees.
MH growth retardant and herbicide	inhibits grass growth: controls wild onions and quack grass; prevents tobacco suckering. Preharvest application prevents destructive storage sprouting of edible onions and potatoes.	extremely safe on plants; easy to apply: in wild onion control, one spray lasts up to 3 years.
Alanap® pre-emergence weed killer	pre-emergence weed-control for vine, row crops; asparagus and nursery stock. Available commercially for use on vine crops.	safe on recommended crops, relatively nontoxic, easy to apply, favorably priced.
Duraset®-20W flower and fruit-setting compound	a fruit-setting chemical for lima beans, legumes, peppers and various tree fruits.	low dosage per acre, easily applied as a foliage spray.

®U. S. PAT. 2,556,665

SEE—Naugatuck Chemical Division, United States Rubber Company, at work on NBC's "Color Spread" TV spectacular, Sunday, March 25, 7:30 PM, EST.

US RUBBER United States Rubber

Naugatuck Chemical Division

Naugatuck, Connecticut

James F. Roe to Manage Florida Operations for IMC Phosphate Chemicals

CHICAGO—James F. Roe has been promoted to manager of the Florida operations of the Phosphate Chemicals Division of International Minerals & Chemical Corp. and Charles A. White has been advanced to manager of the division's Tennessee operations, it was announced Jan. 9 by Howard F. Roderick, vice president in charge of the division.

Also announced were the promotions of Robert V. Safford to assistant manager of the division's Florida operations and Ralph W. Lorentz to plant superintendent of the division's Bonnie plant, near Bartow, Florida.

Mr. Roe will be responsible for all division activities at the Bonnie plant and will report directly to William Bellano, division production manager. He received his chemical engineering degree from Alabama Polytechnic Institute and came to International with more than 18 years experience in manufacturing and production.

Mr. Roderick also announced the appointment of Bryce L. Rhodes as development and production staff manager for the Phosphate Chemicals Division.

Mr. Rhodes will have his office at the Chicago headquarters of the corporation and will report directly to the vice president in charge of the division. Prior to joining International a year ago he was vice president of Synthron, Inc. of Ashton, R.I., manufacturing chemists to the textile industry. He has a chemical engineering degree from the University of Minnesota and a master's degree in chemical engineering from Cornell University.

Mr. White will be responsible for all activities of the Phosphate Chemicals Division's plants at Wales, Tenn., and Tupelo, Miss. He will report to Mr. Bellano. He has been plant superintendent at Wales.

Mr. Safford received a bachelor of arts degree at Cornell University and a chemical engineering degree from Yale University. He had 15 years experience in the chemical industry prior to joining International 2½ years ago.

Mr. Lorentz will be responsible for the production facilities of the Bonnie plant. He has previously been an area supervisor for the division.

Commemorative Group Named for Anniversary

NASHVILLE, TENN.—A. H. Fiske, president of Eli Lilly & Co., Indianapolis, Ind., has been named chairman of the Drug, Chemical and Cosmetic Industries Committee to develop commemorative activities for the 50th anniversary of the Federal Pure Food Law which came into being in 1906. Announcement of Mr. Fiske's appointment was made by Eugene H. Holeman, president of the Association of Food and Drug Officials of the United States.

Among the members of the 26-man committee named by Mr. Holeman are a number of individuals associated with the agricultural chemical trade. These include C. J. Krister, E. I. du Pont de Nemours & Co., Wilmington, Del.; L. D. Harrop, vice president, the Upjohn Co., Kalamazoo, Mich.; Wayne Yoder, American Cyanamid Co., New York; Kimon T. Karabatsos, National Agricultural Chemicals Assn., Washington, D.C., and George W. Fiero, Esso Standard Oil Co.

E. T. York

E. T. York Named Northeast Manager for American Potash Institute

WASHINGTON—E. T. York, Jr., assumed managership Jan. 1 of the Northeast territory for the American Potash Institute, with headquarters in Washington, D.C. This follows the retirement of S. D. Gray who had held that position since the formation of the institute in 1935.

Dr. York is a native of Alabama and received his first two degrees from the Alabama Polytechnic Institute. Cornell University conferred a Ph.D. degree upon him in 1949. From 1949-52 he was associate professor, N.C. State College; professor 1952-53; and head of the department of agronomy from 1953-55.

Among his committee and administrative assignments were: charge of peanut fertility research program, N.C. State College; charge of agronomy teaching; member southern soils research committee, and chairman, fertilizer grades and ratios work group of southern soils research committee. His research and publications were concerned primarily with calcium-potassium interrelations in soils and plants and with soil fertility and management studies with peanuts.

Thomas E. Kuby Joins Diamond Alkali

CLEVELAND — Thomas E. Kuby has been appointed assistant manager of public relations and advertising of Diamond Alkali Company, Cleveland, Ohio.

Having already essumed his new post, Mr. Kuby's primary responsibilities will be editing and preparing the Diamond Story, bi-monthly employee-stockholder magazine, and will also take part in formulating and administering the company's public relations, advertising and sales promotion activities.

A Clevelander, Mr. Kuby comes to the Diamond organization from Power-Pack Conveyor Co., Cleveland, where he has been directing public relations since August. He was previously with Moderne Mail Service, in charge of production of direct mail advertising. He earned his B.S. degree in journalism in February from Ohio University, Athens, Ohio.

Heads Committee

PORTLAND, ORE.—Grant Braun, of the American Potash Institute, Portland, has been appointed chairman of the soils improvement committee of the Pacific Northwest Plant Food Assn., Frank Meeker, president, has announced. Mr. Braun has served the past year as a member of the committee, and has been active in the Idaho Farm Demonstration project sponsored by the association. He succeeds Todd Tremblay, Washington Co-op, Seattle.

Now Ready to Serve You from the Heart of the Southeast with Quality

ANHYDROUS AMMONIA

Our modern plant at Ketona, Ala., is now on stream producing quality anhydrous ammonia in commercial and refrigeration grades. Additional facilities to meet your requirements for nitrogen solutions of all popular formulations will also soon be completed.

Our new facility is the first commercial ammonia plant east of the banks of the Mississippi River and south of Virginia and the first in the nation to be based entirely on coke oven gas. You will find it a dependable and economical source of supply.

Our strategic location in the geographic center of the Southeast enables us to serve many customers more expeditiously and at a substantial savings in delivery costs. Responsible joint ownership by two large, nationally known companies—Hercules Powder Company, Wilmington, Del., and Alabama By-Products Corporation, Birmingham, Ala.—assures maintenance of highest quality standards.

We appreciate the many orders that have been placed with us, even in advance of our plant's opening, and invite your inquiries. Phone, wire or write Alabama By-Products Corporation, Sales Agents, P. O. Box 354, Birmingham, Ala., Phone 7-5171.

KETONA

Chemical
CORPORATION

CORN SWEEPSTAKES

MADISON, WIS. — K. C. Berger, University of Wisconsin professor of soils, recently told a newsman that he was going to get a choice piece of loam land near Dane County, Wis., and try his luck at beating the corn growing achievement of Lamar Ratliff, Prentiss County, Miss. Lamar, 16-year-old 4-H member, produced a world's record 304.38 bu. from one acre last year (Croplife, page 1, Oct. 10.) "I am going to try to bring back to the North the corn championship," Mr. Berger was quoted as saying. "After all, corn is a Yankee Doodle crop."

New York State Not to Be Barred in Nematode Program, Official Says

ALBANY, N.Y.—Reports published on Jan. 10 that New York State Attorney General, Jacob K. Javits, had contended the state agriculture commissioner lacked authority to join the federal government in a program to combat the golden nematode in potatoes were described as "misleading" by Robert G. Blabey, associate counsel of the State Department of Agriculture and Markets.

Mr. Blabey told Croplife that the attorney general's objections concerned only that portion of the cooperative program which requires the state to share with the federal government costs dealing with expenses of an overhead nature. These expenses include janitorial services, rental for storage of machinery and equipment, fuel, light, power and other similar overhead items.

It was explained that present state statutes do not provide for the state entering into an agreement for paying or contributing to such expenditures. However, Mr. Blabey pointed out, that the department has the authority to make payments to potato growers to keep nematode infested land out of production if such land is placed under quarantine.

Legislative action to amend the statutes will be necessary, Mr. Blabey said, to authorize state participation in paying the overhead items.

Chemists Named to Develop Official Pesticide Methods

WASHINGTON — The Association of Official Agricultural Chemists Jan. 9 announced the appointment of 2[illegible] chemists to test proposed methods and develop new methods of analysis for pesticide residues on foods.

Simultaneously an invitation was extended to other interested chemists to assist in these studies. Those who would like to submit methods or participate in the collaborative work are invited to contact William Horwitz, secretary, Association of Official Agricultural Chemists, P.O. Box 540, Benjamin Franklin Station, Washington 4, D.C.

All of the chemists named to head the individual studies are employed by the Food and Drug Administration in its district laboratories or in its research laboratories in Washington, D.C.

The AOAC, an organization of state and federal chemists, has for 72 years been developing and testing methods of analysis required in the enforcement of laws and regulations dealing with fertilizers, pesticides, foods, feeds, drugs, cosmetics and related agricultural commodities.

Methods tested by the association have a preferred status in court testimony. Official methods for the older pesticides such as lead, arsenic, and fluorine have been available for many years, and methods for DDT, benzenehexachloride and parathion have been adopted within the past few years.

The chemists, the location of their laboratories, and their assigned topics are as follows:

F. J. Sabatino, New York, aldrin; D. W. Williams, San Francisco, chlordane; W. C. Woodfin, Baltimore, chlorobenzilate; R. H. Johnson, Seattle, 2,4-dichlorophenoxyacetic acid; G. Kirsten, New York, dieldrin; L. W. Ferris, Buffalo, dinitro compounds; R. A. Baxter, Los Angeles, diphenyl; L. Gersham, New York, endrin; P. S. Jorgenson, San Francisco, heptachlor; J. R. Schnably, Chicago, 2-heptadecylglyoxalidine (glyodin); S. Cohen, New York, distinction between lindane and benzenehexachloride; H. W. Conroy, Kansas City, malathion; S. Williams, Boston, maleic hydrazide; C. D. Schiffman, Atlanta, methoxychlor; F. J. McNall, Cincinnati, nicotine; J. H. Bornmann, Chicago, dichlone; E. C. Deal, New Orleans, sodium 2,4-dichlorophenoxyethyl sulfate (SES); C. D. Schiffman, Atlanta, sodium orthophenylphenate; H. Shuman, Philadelphia, sulfenone; J. H. Cannon, St. Louis, dichlorodiphenyl dichloroethane (TDE, DDD); L. C. Weiss, Los Angeles, toxaphene; A. K. Klein, Washington, benzenehexachloride; P. A. Clifford, Washington, fluorine, and G. E. Keppel, Minneapolis, tetramethylthiuram disulfide (thiram).

All of these studies are under the direction of the association's general referee on residues in foods, L. L. Ramsey of the Food and Drug Administration, Washington, D.C.

The appointments were made at the request of the Food and Drug Adiminstration to aid in the enforcement of the Miller Amendment to the Federal Food, Drug, and Cosmetic Act.

Kentucky Pesticide Meeting Scheduled

LEXINGTON, KY. — New sprays and other materials that may be used this season to combat insects and other enemies of plants and animals will be discussed at a one-day program at University of Kentucky Experiment Station at Lexington Jan. 18. Dealers in such materials, farmers, fruit and vegetable growers and other interested persons are invited to attend.

Dealers—Distributors—INVESTIGATE

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DB Granular WEED KILLER

that destroys deep-rooted perennial weeds!

It's a Money Maker for you!

Here's a weed killer every farmer will want! Be ready for the demand! Now you can offer 2,4-D made doubly effective, longer-lasting, because fortified with borates. DB Granular is always ready to use...anytime, anywhere ...for it is applied DRY! It does *not* need to be mixed with water and applied as a spray. "DB" is powerful! As little as 1 lb. per 100 sq. ft. is effective. Watch for "DB" farm paper advertising in your area.

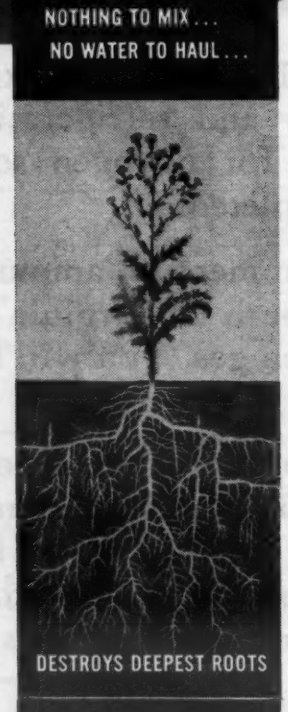
SERVICE BULLETINS, FOLDERS, AD MATS FOR YOU

Be prepared to answer questions about DB Granular. Get your supply of promotional literature at once for new business. Let customers know you've got a supply of this latest herbicide...and start selling!

SPECIAL NEW SPREADER FOR "DB," NOW AVAILABLE

The PCB Spreader was designed for most efficiently applying "DB' at the very low rates prescribed; is also suitable for seeding. Adjustable to rates as low as ½-lb. per 100 sq. ft. Weighs a mere 6 lbs. Holds 25 lbs. of "DB." Retails at only $10.75.

APPLIES DRY...
NOTHING TO MIX...
NO WATER TO HAUL...



CHECK THESE FEATURES:

- DEPENDABLE IN ACTION
- ECONOMICAL...CONVENIENT
- READY TO USE...DRY!
- SAFE...NONFLAMMABLE
- NONPOISONOUS when used as directed
- STANDARD PACKAGE—50 lbs.

CONTROLS THESE PERENNIALS:

CANADA THISTLE • LEAFY SPURGE
TOADFLAX • RUSSIAN KNAPWEED
WHITETOP • BINDWEED (Morning Glory)
and many other perennial or annual herbaceous weeds on non-cropped agricultural land.

Contains 2,4-D yet it is applied DRY!

DB* GRANULAR

INQUIRIES INVITED

OTHER WEED KILLERS (Nonselective)

CONCENTRATED BORASCU®
POLYBOR®-CHLORATE
UREABOR*
*Trade-mark of B.C.L.

FERTILIZER SUPPLEMENTS

FERTILIZER BORATES
POLYBOR®-2
RASORITE* Anhydrous
*Trade-mark of B.C.L.

CONVENIENTLY LOCATED WAREHOUSE DISTRIBUTION STOCKS FOR DEALERS

AGRICULTURAL SALES DIVISION
PACIFIC COAST BORAX CO.
DIVISION OF BORAX CONSOLIDATED, LIMITED
630 SO. SHATTO PLACE • LOS ANGELES 5, CALIFORNIA

MANUFACTURERS OF FAMOUS "20 MULE TEAM" PACKAGE PRODUCTS

Special Retail Section

Better Selling

Richer Fields for Dealers

A SPECIAL CROPLIFE DEPARTMENT TO HELP RETAILERS IMPROVE MERCHANDISING KNOW-HOW

U.S. Farm Census Reports on Fertilizer Use

Details of commercial fertilizer and lime use are included in the preliminary state and county reports of the 1954 Census of Agriculture, released recently by the Bureau of the Census, U.S. Department of Commerce.

In the table below are the figures on fertilizer and lime consumption, including use on specific crops, for the states in Croplife's Western dealer area, to which the special regional circulation of this issue goes.

A chart for the southern states appeared on page 9 of the Jan. 2 issue of Croplife and one for the midwestern states appeared on page 16 of the Jan. 9 issue. A chart for the northeastern states will follow.

The Bureau of the Census points out that the figures in the preliminary reports are subject to revision. The production statistics are for the calendar year of 1954.

Similar statistical data from the 1954 census of agriculture is available for each of the 3,100 counties in the U.S. in the form of individual four-page leaflets. These county reports, along with the state reports, may be obtained from the Director, Bureau of the Census, Washington 25, D.C.

A charge of 10¢ is made for a single preliminary report, state or county. Charges for each of the complete state sets vary, depending upon the number of counties involved. A charge of $41 will be made for one complete U.S. set, including all counties and all states. A set of the 48 state reports may be obtained for $3.75. Payment should be included in the order.

In addition to the data on fertilizer and lime use, the preliminary reports include statistics on number of farms, farm characteristics, acreage in farms, value of land and buildings, uses of land, farm facilities and equipment, specified classes of livestock, specified crops harvested, and available comparative data from the 1950 census of agriculture.

	Arizona	California	Colorado	Idaho	Montana	Nevada	New Mexico	Oregon	Utah	Washington	Wyoming
COMMERCIAL FERTILIZER											
Dollars	12,646,702	63,003,464	3,968,642	8,368,415	2,225,203	257,720	2,388,029	11,867,605	1,565,902	14,245,536	1,024,221
Tons	124,517	815,619	46,381	110,459	27,422	3,282	28,977	150,025	21,448	156,915	11,650
Acres fertilized	798,025	3,877,009	422,951	946,573	638,626	28,817	234,980	1,313,079	166,164	1,783,342	120,338
LIME AND LIMING MATERIAL											
Tons	1,245	134,595	760		405	38	496	34,981	202	30,391	631
Dollars	10,942	804,411	6,249		2,451	615	3,782	360,607	773	300,488	1,958
Acres limed	1,394	70,380	1,660		1,049	17	451	25,551	385	25,479	955
CROP USE OF FERTILIZER											
Hay and cropland, pastured ...tons	10,081	59,550	7,720	24,768	7,455	1,357	8,915	22,233	5,976	20,383	3,787
acres	82,463	421,966	81,014	234,186	109,828	14,119	85,910	215,946	55,105	181,984	44,726
Other pastures ...tons	156	11,939	775	2,196	512	210	219	6,896	659	3,756	239
acres	2,391	88,625	9,283	24,146	9,011	2,254	2,642	54,441	7,400	34,839	2,271
Corn ...tons			7,926				502				
acres			90,609				3,888				
Cotton ...tons	61,715	142,048					14,400				
acres	383,530	745,706					107,555				
Rice ...tons		39,901									
acres		376,748									
Sugar beets ...tons			13,439	18,942	7,070				5,258		4,430
acres			99,789	81,190	50,194				28,548		34,036
Wheat ...tons				21,022	7,782	326		17,764	1,969	44,128	326
acres				270,822	361,686	3,417		364,871	25,311	964,632	3,681
Oats ...tons								10,067		4,538	
acres								99,062		57,537	
Fruits, vegetables, potatoes, etc. ...tons	19,662	400,205	8,734	21,945	591	518	1,896	39,752	3,207	42,762	338
acres	62,374	1,147,117	50,169	110,002	4,710	2,126	9,636	156,230	17,877	201,211	2,487
Other crops ...tons	32,456	159,802	7,539	21,530	3,926	868	2,957	52,089	4,281	40,374	2,561
acres	270,559	1,103,947	92,395	226,436	103,453	6,901	25,642	421,924	32,697	341,981	33,281

SHOP TALK OVER THE COUNTER FOR THE DEALER

By EMMET J. HOFFMAN
Croplife Merchandising Editor

"The land where the tall corn grows" is a familiar and proud boast of many a corn-growing county.

Some day the boast may be changed. Perhaps it will be to "the land where the big yields are grown." At least, that is what Dr. George N. Hoffer of Lafayette, Ind., a well known consulting agronomist, thinks.

Farmers are learning how to produce higher yields of corn by growing highly efficient stalks, he states. Instrumental in this switch have been the new high-yielding hybrids, the development of new techniques in soil testing and the more general use of fertilizers at heavy rates of application.

The outlook for the U.S. corn farmer, Dr. Hoffer says, is for progressively higher yields per acre and even more efficient operations as science and technology reveal more of the secrets of plant production, nutrition and growth.

Dr. Hoffer, a consultant to fertilizer and seed corn companies, has some definite thoughts on high corn yields.

Proper Nutrition

The chief ingredients in producing high yields, says Dr. Hoffer, are perserverance, good climatic environment, proper nutrition, and hybrid seed, as exemplified by a Mississippi teen-ager, 16-year-old Lamar Ratliff who last year grew 304 bu. of shelled corn per acre to set an all-time world record.

Young Ratliff's success is all the more amazing because his record was made by growing and harvesting a solid acre, and not by choosing high-yielding plots of less than an acre. Dr. Hoffer points out that the latter method is the accepted practice in corn growing competitions so that Ratliff has set new standards for these competitions.

"In Ratliff's case, some of the factors which resulted in his record yield were the high rate of fertilizing, optimum plant population and the use of hybrid seed.

"As wonderful as this progress has been, science still is in an early development stage in the production of better hybrid seed and in knowledge of the adequate nutrition of crops. Future hybrids may produce three or even six ears of corn per stalk," Dr. Hoffer says.

Farmers who grew corn for its tallness or selected a few good ears for a "corn beauty contest" at a state fair, were being uneconomical, Dr. Hoffer asserts.

One-ear stalks, he says, take up

(Continued on page 15)

Unusual Knowledge of Plants, Insects Helps Build Business for Texas Dealer

Because the owner has become accepted locally as a self-made authority on plant diseases, insects and fertilizers, the Wyatt Seed & Plant Co. of San Angelo, Texas, has built up a business that keeps ten employees busy selling and giving service to hundreds of customers.

Around San Angelo, C. F. Wyatt is known as "the man who knows everything about plants and insects." Though lacking formal college training, he is sometimes consulted by entomologists and horticulturists in the community.

On the day of this interview, a lady brought in a rose bush that was dying. Mr. Wyatt looked it over carefully then said: "You've got a root fungus started in your rose garden. Did you put out a lot of unsterilized manure last spring?"

"Why, yes," the woman answered puzzled. "How did you know?"

Mr. Wyatt could have told her he had been studying and observing and learning about such things for 15 years. Instead he told her to remove the manure, which had caused soil heating and instructed her to pull up all affected plants and make a new start next year.

"We get many problems like this," he said. "Most of the time I can answer them. If not, I send samples or write to some laboratory or college."

Another time a rancher living fifty miles away came and took Mr. Wyatt out to the ranch orchard which was dying. Mr. Wyatt made a careful investigation, spotted the insect responsible and suggested a quick control.

A few experiences like this has spread the trade territory out until customers now come from a radius of a hundred miles.

In selling fertilizers Mr. Wyatt relies upon soil tests and information about previous use of the land. One problem on local soil is that a high calcium content causes chlorosis of the plant, or yellowing of the leaves. Mr. Wyatt worked on this problem for two years before getting a solution that he could recommend to customers.

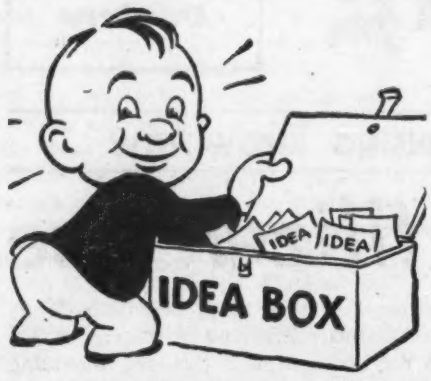
"In this business," said Mr. Wyatt, "we honestly try to solve the farmer or gardener's problem then recommend just what he needs. Too many dealers try to oversell, when they would do better by trying to learn something of their products."

Wyatt Seed & Plant Co. has heretofore stressed the town trade, but now that it has built a large warehouse, it hopes to get the farm business as well.

"Farmers are beginning to face trouble with increasing insects and soil depletion in this area," Mr. Wyatt said. "We work with them the same way we do with town customers. I check the fields, try to discover what is needed and then sell the man just what is needed."

"You know, a fellow can't do much in this business leaning back in a swivel chair. Why half my time is spent out on customers' places."

While many dealers of the area are singing the blues because of the long drouth, water shortages, cutthroat competition and other reasons, the Wyatt Seed & Plant Co. has enjoyed a steady growth.



What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6362—Soil Moisture Indicator

The T. W. Prosser Co. is marketing a soil moisture indicator, called by the trade name, Irrometer. It is claimed to automatically evaluate the many varying soil and climate factors and register available soil moisture continuously on an easy-to-read gauge. The instrument consists of a hollow porous cup attached to an air-tight, water-filled plastic tube and a vacuum gauge. As the soil dries, moisture is extracted from the porous cup into the soil, causing a suction force (tension) to develop within the Irrometer which registers on the gauge. After irrigation the reverse action takes place. Secure more complete details by checking No. 6362 on the coupon and mailing it to Croplife.

No. 6363—Formulators' Booklet

McLaughlin Gormley King Co., Inc., has prepared a booklet on the firm's product, Dry Pyrocide, a pyrethrum concentrate. The booklet is entitled Non Toxic and Low Residue Agricultural Insecticide Concentrates and is available at no charge to agricultural insecticide formulators. The booklet states that dusts made from the firm's product are safe to use right up to the time of harvest. Information in the booklet includes sections on storage and handling Dry Pyrocide, diluents or carriers, compatible insecticides or fungicides, mixing machinery, packing and storage of the product, labeling, registration, strengths and dosages and commercial applications. Information for manufacturers on the firm's product, P-M Dust Concentrate, is also included. Formulators may check No. 6363 on the coupon and mail it to secure the booklet.

No. 5369—Seed Treater

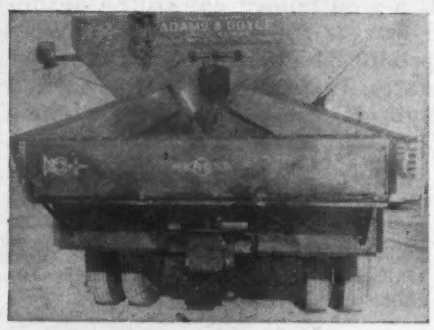
A new automatic 150 bu.-per-hour liquid seed treater has been announced by Panogen, Inc. Smallest of the Panogen treaters, the new model JS-100 is said to offer the same "push button operation" and other features formerly available only in the firm's larger-capacity models. The electric motor, wire cord and plug are standard equipment. For non-stop treating of wheat, oats, barley, flax, rye, and similar seed, the liquid seed disinfectant can be delivered by connection hoses directly from the shipping container. Since the pump will deliver the liquid up to a 50-ft. height, it is even possible to keep the drum outside (the liquid doesn't freeze) or in a remote part of the building, it is claimed. The liquid may also be supplied from the drum by gravity or from an inverted bottle fitted to the top of the treater. Secure more complete details by checking No. 5369 on the coupon and mailing it to this publication.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 6354—Fertilizer Spreader

A new line of fertilizer, lime and phosphate spreaders has been announced by Adams & Doyle, Inc. According to the manufacturer the most popular features are: The exclusive precision built gear box with spiral gears; hardened steel shafting with 1⅜-in. and 1¾-in. bearings; the solid 11-gauge steel sheets used in the sides and ends; the design that allows the



material to be dropped directly into the "eye" of the fan, permitting a more uniform and wider swath to be spread each time through the field. The feed gate can be set to spread uniformly from 100 lb. per acre up to four tons per acre. The spreaders are available in 7-ft., 8-ft., 10-ft. and 12-ft. sizes. Complete information and a two-color brochure are available. Check No. 6354 on the coupon and mail it to Croplife.

No. 5361—Scale Bulletin

A new six-page, two-color bulletin describing a versatile bulk weighing scale for process weighing is offered by Richardson Scale Co. Described is the model E-50 scale which is electrically controlled and pneumatically operated. It is said to be completely automatic in operation. It will weigh nearly all dry, granular, small lumpy, crushed and powdered materials. The bulletin discusses the scale's construction, capacity, accuracy, and process weighing features. It describes such special features as a hopper door flapper, different inlet chutes, recording counter, accurate knife edge weigh beam and optional agitator and subsidiary beam equipment. For more complete details check No. 5361 on the coupon and mail it to this publication.

No. 6360—Catalog

The new equipment catalog of Schelm Brothers, Inc., has been published and is now available. Schelm manufactures nitrogen equipment. There is no obligation in securing the catalog. Check No. 6360 on the coupon and mail it to Croplife.

No. 6361—Soil Drench

A new product for the control of damping-off is being marketed by Panogen, Inc., an affiliate of the Morton Salt Co. The new product is a liquid chemical soil drench called Pano-drench, developed as a means for controlling damping-off and other soil-dwelling fungus diseases. The product is used in a dilution of one teaspoonful to 3 gal. water and is applied to the soil before planting by drenching the flat or flower pots thoroughly. Since no drying or leaching is necessary, seeding can begin within 24 hours after treatment of soil, the company states. The product is available in 1 oz., 4 oz., and 16 oz. bottles. One 4 oz. bottle makes 72 gal. of drench and treats approximately 150 to 200 flats of 2½ sq. ft. size, it is claimed. Secure more complete details by checking No. 6361 on the coupon and mailing it to Croplife.

No. 6359—Fertilizer Mixer

Plant Foods, Inc., has announced its Chief mixing and blending unit for manufacturing of mixed fertilizers. The mixing unit is complete with push button control and incorporates many special features for economical plant installation and operation, the company claims. Production of the blender is being handled in cooperation with the Henderson Manufacturing Co., which also manufactures spreader bodies, bulk transport trucks and other allied equipment. Secure more complete details by checking No. 6359 on the coupon and mailing it to Croplife.

No. 6356—Corn Borer Bulletin

The Mackwin Co. has issued a folder entitled, "More Effective Corn Borer Control — Mackodee Granules G-20." The folder describes the firm's granular DDT product. Sections are devoted to what customers have to say about the product, the development of field tests which were begun in 1953 and the diluent and DDT level of the product. The folder adds that Mackwin product was "the only granular DDT used on large scale commercial acreage during 1955." The folder and other information may be secured by checking No. 6356 on the coupon and mailing it to Croplife.

No. 5360—Feeder

The Omega Machine Co., division of B-I-F Industries, Inc., is manufacturing the Hi-Weigh, model 37, belt gravimetric feeder for continuously feeding dry materials at medium to high rates. This feeder, with

Send me information on the items marked:

- ☐ No. 5309—Accounts Receivable
- ☐ No. 5358—Feeders
- ☐ No. 5360—Feeder
- ☐ No. 5361—Scale Bulletin
- ☐ No. 5369—Seed Treater
- ☐ No. 6354—Fertilizer Spreader
- ☐ No. 6355—Pesticide Catalog
- ☐ No. 6356—Corn Borer Bulletin
- ☐ No. 6357—Pulverizer Bulletin
- ☐ No. 6358—Bag Filling Machine
- ☐ No. 6359—Fertilizer Mixture
- ☐ No. 6360—Catalog
- ☐ No. 6361—Soil Drench
- ☐ No. 6362—Moisture Indicator
- ☐ No. 6363—Formulators' Booklet

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feature called **Sens-A-Gram**, has a super-sensitive controller which maintains accuracies well within + or — %, it is claimed. It offers built-in 100-1 variable speed transmission and a single power source with no auxiliary drives. Being introduced is a new line of gravimetric feeders of the loss-in-weight type for feeding a wide range of liquids and solids. Simplex and Duplex models are available in several sizes for feed rates from 1 lb./hr. to 60,000 lb./hr. Equipped with a "built-in memory," the feeder, with an accuracy of + or — ½% by weight, is available with totalizer, indicator or recorder, the company states. Check No. 5360 on the coupon and mail it to secure more complete details.

No. 5358—Feeders

"Application of Principles of Instrumentation to Liquid and Dry Feeders" is the title of an eight-page preprint of a paper by Paul A. Coffman and issued by Omega Machine Co., division of B-I-F Industries, Inc. This preprint contains 11 flow-parts diagrams, and is part one on "Controllers." Purpose of this paper is to provide a basic knowledge of the application of instrument principles to gravimetric feeders, especially the function of the controller in its various forms. For your free copy of Preprint B-I-F-M65 check No. 5358 on the coupon and mail it to Feedstuffs.

No. 6358—Bag Filling Machine

A new brochure on Kraft Bag Corporation's automatic open mouth bag filling machine, called by the trade name, Kraftpacker, has been prepared. The brochure is entitled, "What You Want to Know About the Kraft Bag Corp. Automatic Open Mouth Bag Filling Machine." Two pages of the brochure are devoted to a question and answer method of presenting information. The brochure states that the unit will handle all weights from 25 lb. to 200 lb. The back page is devoted to a diagram and text explaining how the machine works. Secure the brochure by checking No. 6358 on the coupon and mailing it to this publication.

No. 6357—Pulverizer Bulletin

The Pulva Corp. announces the availability of a new condensed bulletin No. 5510 describing the firm's line of high speed pulverizers. The firm's product, called by the trade name, Pulva-Sizer, is available in five sizes ranging from ¾ h.p. to 75 h.p. The bulletin states that there is a "size and type to meet your requirements . . . for fine grinding, blending and dispersing, granulating, wet milling or close particle size control." A partial list of companies who are users of Pulva equipment is included. Secure the brochure by checking No. 6357 on the coupon and mailing it to Croplife.

No. 5309—Accounts Receivable

"Simplified accounts receivable for retailers" (SARR) is described in an 8-page folder released by Remington Rand. Based on the company's "simplified unit invoice accounting plan" (SUIAP), "simplified accounts receivable for retailers" uses no accounting machines and requires no highly trained clerks. It is claimed to provide a complete, accurate and fast method of handling accounts receivable. The method uses Remington Rand's Kolect-A-Matic trays, housed in Safe-Ledger equipment for 24-hour protection from fire, and provides an accounts receivable ledger composed of open, unpaid items only, a monthly statement for each customer, and a history of each account. Secure literature on this method by checking No. 5309 on the coupon and mailing it.

No. 6355—Pesticide Catalog

The York Chemical Co., Inc., has published a catalog of its pesticides and has it available for distribution. The company manufactures the Certox line of pesticides. The products described in the catalog include insect, roach and fly sprays, wettable powders, rodenticides, insecticide dusting powder, roach and ant powder, and pyrethrum insecticide dusting powder. Also the company's line of termite killers and wood preservers is described. Included are shipping and packing information. Secure the catalog by checking No. 6355 on the coupon and mailing it to Croplife.

Chemical Industry Shows Continued Growth in California

SAN FRANCISCO—One thousand one hundred and sixty-three chemical manufacturing firms in California paid out a total of $46,985,697 in wages and salaries to an average number of 36,193 employees during the last three months of 1954.

The division of research and statistics of the California State Department of Employment made this report recently, based on the number of chemical firms reporting to this department and paying unemployment compensation insurance.

The figures indicate a growth in the industry from the previous year. During the last three months of 1953 there were six fewer manufacturing firms (1,157) employing almost 700 fewer workers (35,504), and paying out $2,700,000 less in wages ($44,294,677). In 1952 the respective figures were 1,148 firms hiring an average of 35,374 employees and paying them $41,752,914.

Of the 1954 figures, more than half the chemical firms and an almost even half the wages were paid in the Los Angeles metropolitan area: 698 firms paying $23,453,445 to a fraction over 18,000 employees.

The San Francisco-Oakland bay area accounted for another 270 firms paying $15,239,988 to some 11,750 employees. According to these figures, the earnings of individual workers were approximately the same in both metropolitan districts, a little more than $1,300 per quarter, but the northern California factories were larger, employing an average of about 43 or 44 workers compared with 25 or 26 in the Los Angeles area.

Alfalfa Aphid Insect Enemies Released In California

SACRAMENTO — The California Department of Agriculture has been notified by the University of California that fungus and insect enemies of the spotted alfalfa aphid are being distributed throughout the state.

The University is producing 1,000 enemies of the alfalfa aphid daily for release in the state's alfalfa fields.

Bodies of spotted alfalfa aphids killed by an internal fungus are being placed in test plots designated by local agricultural commissioners. Spores are carried by wind currents and land on live aphids with eventual fatal results. The fungus spore germinates and sends tiny threads into the insect's body. Once inside, the threads develop and destroy the aphid.

New Mexico Mining Production Shows Increase

CARLSBAD, N.M. — Potash contributed to more than half of New Mexico's approximately 110.5 million dollar mining production during the fiscal year which ended June 30, 1955, according to John Garcia, New Mexico state mining inspector. This was an increase of more than 12 million dollars over the previous year's output.

The potash industry, now centered in Eddy and Lea counties, is furnishing employment for more than 4,000 men. Wages are among the highest in the world, averaging over $5,200 a year, and working conditions have been improved until they are also among the safest of any mining section in the world.

G. F. Swope, president of Potash Company of America, recently stated that the tonnage shipped from this area will remain at the present level or perhaps increase for some years to come. Mr. Swope's company has installed an extensive belt system in the mine to replace track haulage of ore. When completed it will be 7½ miles in length and will be the longest underground belt in the world.

CONSERVATIONIST NAMED

FORT COLLINS, COLO.—Appointment of Robert E. Bement as a range conservationist on the staff of the Central Great Plains Range Research Unit of Agricultural Research Service, U.S. Department of Agriculture, with offices on the Colorado A&M College campus, was announced recently. Mr. Bement is assigned to range management and revegetation studies for the Central Great Plains Region.

All crops need nitrogen.
When they do . . . SELL

HORSE & LION NITROGEN FERTILIZERS

ALL HORSE & LION nitrogen fertilizers are easy to spread—because they're granulated for that particular purpose. So they are easy to handle, and easy to apply. If you want to sell the **best**, at competitive price, **offer "Horse & Lion" nitrogen fertilizers**—five different types and concentrations for various requirements:

HORSE & LION Calcium Nitrate: 15½% pure nitrogen, combined with about 28% available lime. Granulated.

HORSE & LION Calcium Ammonium Nitrate: 20½% pure nitrogen (10¼% nitric and 10¼% ammonic nitrogen) and approximately 33% calcium carbonate. Granulated.

HORSE & LION Ammonium Sulphate Nitrate: 26% pure nitrogen (11% nitric and 15% ammonic nitrogen). Granulated.

HORSE & LION Urea 44: 44% pure nitrogen. Coated pellets for dry use.

HORSE & LION Urea 46: 46% pure nitrogen. Pellets without coating for liquid application or dry use where fast dissolving desired.

For complete information and prices, contact your nearest "HORSE & LION" fertilizer headquarters.

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Better Selling

Richer Sales Fields for Dealers

Rotund Oscar Schoenfeld was busy at work at his neat desk that Friday morning when Pat McGillicuddy, his lean, blue eyed partner came in about 8:30 a.m. No one ever beat Oscar to work, but in honesty it should be said that Pat sometimes worked on ads after supper in the evenings while Oscar was home watching television on a 10 inch set which he had picked up at a farm auction sale.

"Oscar," said Pat, "can your wife bake good cakes?"

"Ach, she sure can," returned Oscar proudly. "If I say so myself, she is one of the best cooks I know. Her graham cracker torte is wonderful and so is her spice cake. She makes the good old fashioned cakes, not these ones where you just heat the oven and let 'em bake almost in the store package."

"And speaking of cakes, Oscar, have you forgotten that it's our business anniversary soon? The ninth. Usually we put on a big sale for that event."

Suspicion sped through Oscar's mind. "Say, if you think you can talk me into getting Minnie to bake a whole bunch of cakes to give away with coffee at that sale, you are mistaken. Ach, I will not be giving stuff out of my kitchen for those hungry farmers. Not me."

Pat grinned. "I didn't mean you should donate cakes, Oscar. I know how much that would hurt you. I merely asked you that question about Minnie baking good cakes to prove a point."

"What point?"

"That every husband is mighty proud of the cakes his wife bakes. Your reaction fits in perfectly with my plan for an anniversary sale celebration."

Oscar groaned. "Pat, can't we forget about these sales and promotions? We have been staging so many in the past year I am dizzy. And the costs. Think of all the money we would have in the bank if you hadn't spent so much for advertising, prizes and things like that."

"We surely don't see eye to eye on the value of advertising and promotions," Pat agreed, "but I was reading the other day there is a terrific shortage of sales people. Only one person out of sixteen is a salesman or salesperson. That means one salesman must support fifteen other people who don't sell."

Oscar bristled. "How about those who keep the books, who figure out the discounts, cut expenses and all that?"

"Oh, their work is important, too," Pat said genially, "but of course they wouldn't have any bookwork to do, if those who sell didn't get out and get the sales. That's why we have to advertise and promote all the time if we want to be up with the profit leaders in our business."

"Well, maybe it's all right to get your toe wet once in a while," Oscar grumbled, "but that doesn't mean a business man has to wade in right up to his neck everytime somebody comes around with an advertising idea."

"I think this cake idea along with the anniversary sale is really going to build our store traffic," Pat said enthusiastically, despite the fact that Oscar looked more suspicious and skeptical than ever.

"We can offer to buy 50 home baked cakes from farm women for $1 each. That will cover cost of ingredients. Then we will offer as a prize for the best cake five bags of fertilizer, four bags for the second, three bags for the third, two bags for the fourth and one bag for the fifth. Unless I miss my guess we'll have the best display of cakes ever shown in this county. Farm women will be anxious to bring their best cakes."

Oscar plainly showed his consternation. His eyes bulged. "Fifty cakes at $1.00 each. Fifteen bags of fertilizer and more for prizes! Ach, have you gone crazy? Always giving, giving, giving something away. Why not let's try putting something in the cash register? With the anniversary sale advertising and all those prizes we'll spend $150, maybe $175. Let's not get foolish. Let's not be in business just to sell and make no profit!"

Once more Pat smiled. "When you get a lot of people in the store standing around, laughing, eating, having a good time, they are bound to see our fertilizer and farm supplies displays, Oscar. Many of them will buy. And we will show a few short films on fertilizing corn land."

"But we did something like that last year!"

Pat nodded. "Sure, we did, and it drew big crowds. We did a fine business that week. Folks want to come to one again. They're anxious for some fun. And the cake contest will add a different appeal. We might even take a picture of each woman with her cake. Cost us only about 25 cents a picture with our camera, using flash."

"Don't do it!" put in Oscar quickly. "They can get along without the pictures. Ach, it's costing us enough already, this crazy anniversary business."

"Why, we will double our store traffic that day," Pat said excitedly. "Formerly we attracted mostly men. Now the wives will come, too, and they have a lot to say about buying fertilizer, feeds and other supplies. Golly, maybe I could get the local newspaper publisher to take pictures of all those cakes, and with the prize winners standing nearby. Gosh, that would be extra publicity—for free, too."

"For free," snorted Oscar. "You get a few pictures free and then spend $175 besides. Pat, this is going to knock my budget for the month all to heck! And just when I thought we had expenses cut down to where they should be."

"Maybe our expenses would be a little higher, but the sales will be up, too," Pat predicted. "So we will come out on top. We've got to take advantage of the anniversary angle."

"Angle, angle!" cried Oscar angrily. "That's all we hear around here is promotional angles. And they all cost money!" Then he said something out of anger which he had never said before. He said, "Why don't you buy me out, Pat? I'm getting sick of this spending all the time. Then the business can be all yours, and I can find another partner, somebody more like myself."

Pat was serious for a moment. He looked his partner straight in the eye. "All right, Oscar, I'll buy you out. Name a fair price. But you'll have to wait a little for your money. Nora and I are strapped right now. We just finished paying for the house and the kids take music lessons and all that. I can pay you something month by month out of the profits."

"Profits!" Oscar almost screamed. "With you running the business all by yourself, there won't be any profits. There'll be bankruptcy in a hurry, that's what. And then I won't get any money." He put his hands to his head in a gesture of despair. "I'm hooked. I'm sunk. I gotta stay to protect my investment. Ach, du lieber!"

JUNIOR VEGETABLE GROWERS—Officers and district directors elected at the 21st annual convention of the National Junior Vegetable Growers Assn. are shown above. From left to right, they are Clarence Chappell, Jr., Belvidere, N.C.; Nadine Thompson, Massena, N.Y.; John Porter, Baldwinsville, N.Y., vice president; Gwendolyn Fair, Marks, Miss., secretary; Jack Armstrong, Springfield, Ill., president; Betty Lou King, Caro, Mich., and Jack Baringer, Hathaway, Mont. Sponsors of the association in the field of agricultural chemicals include the Olin Mathieson Chemical Corp., Baltimore; National Plant Food Council, Washington, D.C., and Dow Chemical Co., Midland, Mich.

Net Farm Income Dips 10% in 1955; Further Drop Seen

WASHINGTON — Realized net farm income for 1955 is expected to show a 10% decline from 1954, according to the U.S. Department of Agriculture, and some further decline in net income is probable in 1956.

USDA, in its latest report on the farm income situation, said farmers' realized net income was at an annual rate of $10.7 billion during the first three quarters of 1955. A slightly lower rate is anticipated in the fourth quarter, and realized net income for the year as a whole is expected to total around $10.6 billion, or 10% below the $11.8 billion realized in 1954. (Realized net income is the difference between realized gross income and total production expenses.)

Realized gross farm income in 1955 is about 3% lower than in 1954, but production expenses are slightly higher.

The 1956 outlook is for some further decline in gross income, reflecting further acreage restrictions on some crops and slightly lower average farm prices for the year as a whole. Production expenses will remain high in 1956, although farmers may be able to reduce the total a little because of lower feed costs. Net income will probably show some decline.

Because of the reductions in the farm population over the last few years, the decline since 1951 in net income per person on farms from all sources has been much smaller has not shown any further decline in 1955. With farmers' realized net income down 10%, income per person on farms in 1955 is undoubtedly lower than in 1954, even though income from non-farm sources has risen with expanded non-farm job opportunities and higher wages.

Farmers' cash receipts from marketings in 1955 will probably total $29.2 billion, down 3% from 1954. The total volume of farm marketings is 2% larger, but prices average 5% lower.

Cash receipts from livestock and livestock products total $16 billion, than the drop in total realized net income of farm operators, USDA noted. However, the farm population 4% less than last year. The decline is due mostly to lower hog prices. Cash receipts from dairy products and poultry and eggs are each up a little.

The estimated cash receipts from crops total $13.2 billion, down 2%.

Realized gross farm income is expected to total about $32.9 billion in 1955, or 3% less than in 1954. In addition to cash receipts from marketings, realized gross income includes value of home-consumed farm products, rental value of farm dwellings and government payments to farmers.

HEADS COUNTY AGENTS

BATON ROUGE, LA.—Neal Dry, Shreveport, agricultural extension service agent for Caddo Parish, has been named to a two-year term as president of the Louisiana County Agents Assn.

FARM SERVICE DATA
Extension Station Reports

Prospects that an English-developed member of the 2,4-D chemical family may solve some of Oregon's major weed problems in pastures and legume hay and seed crops are shaping up at Oregon State college. W. R. Furtick, OSC agronomist, reports effective control of sour dock and other broadleaf weeds with 'new butyric acid formulations" of 2,4-D and MCP. The new formulation, developed by a British scientist, caused no apparent damage to legumes in one-year trials at Corvallis and Astoria.

New alfalfa seedlings were unharmed by spray applications that gave effective weed control, Mr. Furtick reports. Rates up to 3 lb. per acre of the new formulations caused no damage to either alfalfa or clover, but lotus seedlings showed some damage at the higher rate. A safe 1 lb. rate on lotus, however, controlled more than 90% of broadleaf weeds.

Biggest benefits to Oregon, Mr. Furtick believes, will come from control of sour (or curly) dock that county agents list as the worst pasture problem in central and southern Oregon, the Willamette Valley, and especially on the coast.

H. B. Howell, superintendent of OSC's John Jacob Astor branch experiment station at Astoria, reports 1 lb. per acre of the butyric acid formulation killed all dock in grass-legume pasture trials with only a temporary set-back to the pasture. Other main pasture weeds that the researchers now hope to control include thistle and buttercup.

★

Crop rotation and fertilizer should be used as a team, say agronomists, but fertilizer alone will often do the job. Or at least it does on the Ralph Gonzales farms near San Elizario, Texas in the Rio Grande Valley.

On one field cotton has been planted continuously for almost 25 years, and the yields have not yet started dropping. The 38-acre tract was expected to produce 110 bales in 1955. This is considerably above the average yield of the valley.

Mr. Gonzales contributes the high yields to carefully supervised farming methods and plenty of fertilizer. This last crop received from 120 to 160 lb. of anhydrous ammonia and from 300 to 400 lb. of 20% superphosphate to the acre.

★

Researchers working on rangeland problems at Colorado A&M believe that more Russian wild rye should be used in range reseeding programs. They say that drouths of past years have proved the ability of the rye to stay alive when other seeded grasses die.

★

Floyd Lee, San Mateo, N.M. rancher, has applied fertilizers on four different types of rangeland on his ranch. Fertilizers used were nitrogen, phosphorus, and potash, applied both singly and in combination at varying rates. Eight different treatments were applied on each of the four types of rangeland.

Mr. Lee is being assisted in the experiment by Henry Chavez, Valencia County extension agent, and the Department of Agricultural Services at New Mexico A&M College. The plots will be clipped next season and the forage production will be weighed and compared with nonfertilized plots. Cost of fertilizing rangeland would run from $5.50 to $12 an acre, estimates show. Hay production would have to be increased less than a half-ton per acre to make the practice profitable.

★

Modern agriculture has a record of accomplishment of which it can be justly proud, reports the California Fertilizer Assn. In the U.S., agriculture is producing food and fiber of increasingly high quality, in sufficient quantity to more than care for the needs of our rapidly growing population. All this on a shrinking area of farm lands, and with fewer farmers each year to do the job.

In 1800, the association says, it took nine farmers to support their own plus one city family. Today, one farmer in our country produces enough to feed and clothe 17 people. The association points out that improved cultural practices are responsible, for in other parts of the world where farming is conducted as it was many years ago, the old ratio of nine to one still prevails.

California's population is expected to reach the figure of 23½ million, an increase of 87%, by 1975. At the current rate of withdrawal of agricultural land from production, which approximates one million acres per year throughout the country, California will have a great many fewer acres than are now in production.

★

Sweet cherry yield increases by insuring a higher fruit set with hormone sprays have been reported by two Oregon State college research horticulturists.

Presenting preliminary findings of their work to members of the Oregon Horticultural Society, Ralph Garren and Quentin Zielinski said hormone sprays applied at 80% of full bloom have increased the number and size of Bing, Royal Anne and Lambert cherries, compared to unsprayed trees.

Full-scale field trials will begin this year since results of preliminary trials have been so encouraging.

Results from two years' work show one hormone increased fruit set 76% over unsprayed trees, but fruits weighed about the same. Another hormone spray increased fruit set about a third and upped fruit weights 14%. Trees were sprayed with 20 parts per million of hormone.

Scientists have known for several years that natural hormone production in the tree is greatest during blossoming and fruit formation. They also have observed that low temperatures tend to lower fruit formation. Hormone sprays seem to replace some of the natural hormones that might be affected by low temperatures, Mr. Garren and Mr. Zielinski think.

FIRMS MERGE

RICHMOND, VA. — Diggs & Beadles Seed Co., Inc., and Beck's Lawn and Garden Supply, Inc., have merged and will operate under the former name. The firm will have three retail outlets here.

Grasshoppers Pose Threat to Millions of Acres of Pasture, Cropland in Texas, New Mexico

TEXAS

COLLEGE STATION, TEXAS — Livestock producers and farmers in the Texas Panhandle and in counties along the caprock south to Borden and east to Kent and Stonewall are alerted to possible widespread and damaging infestations of grasshoppers in 1956. Also counties in the central part of the state from the Oklahoma line southward to Gonzales and Guadalupe, should watch developments very closely.

F. M. Fuller, Texas extension entomologist, says surveys made by the Plant Pest Control Branch of the U.S. Department of Agriculture last summer and fall show that 8,747,000 acres of rangeland in the West Texas areas are carrying 'hopper populations ranging from 14 to 100 per square yard. This compares with an estimated four and a half million acres infested at this time in 1954.

Favorable weather conditions at and immediately after the hatching season could produce more trouble from 'hoppers than has been experienced in several years, says Mr. Fuller.

On the other hand, he points out, unfavorable weather and the presence of predators and grasshopper parasites could cut the anticipated infestation. But, he adds, the situation should be carefully watched and plans made for an all-out control program. The area where heaviest populations are expected also has about the same acreage of cropland infested now.

If the expected outbreaks occur in large areas controls should be applied between June 1 and July 15. The federal government will bear one third of the cost of treating rangeland and provide technical assistance. The estimated cost per acre is 60¢. The savings in grass could amount to several millions of dollars.

Mr. Fuller points out that an infestation of 6 to 7 'hoppers per square yard on 10 acres can consume grass at about the same rate as a cow and that 8.7 million acres now have potential populations of from 14 to 100 'hoppers per square yard. Local county agents will be watching developments and organizing for control but will need the cooperation of all concerned, says Mr. Fuller.

NEW MEXICO

STATE COLLEGE, N.M.—Grasshoppers will infest about three million acres of range and cropland in New Mexico in 1956, according to a survey completed recently by federal grasshopper control officials. The survey, supervised by G. F. Fulkerson, Albuquerque, of the Grasshopper Control Project, pinpointed areas where control operations should be carried out next spring and plans are already underway for a full-scale war against the feed and food-destroying pests.

Heavy infestations are expected in the San Augustine Plains area of Catron and Socorro counties where ranchers sustained heavy losses on drouth-stricken ranges in 1955. Officials estimate that approximately one million acres in these two counties will be heavily hit by the 'hoppers again in 1956.

Other areas which suffered devastating attacks by the 'hoppers in 1955 and which are expected to be hit even harder in 1956, are Lea, Union, Lincoln, and Chaves counties.

More than 600,000 acres of grassland in Lea County will have heavy populations of the 'hoppers in '56. In Union County, the 'hoppers are expected to infest 620,000 acres of rangeland. Another 284,000 acres of range in Lincoln and Chaves counties will have heavy infestations.

Control operations were carried out on 458,000 acres of rangeland in Lea, Chaves, Union and Harding counties in 1955. Although over 90% of the 'hoppers were killed in these areas and rangelands will be free of damaging infestations for several years, this control work made only a small dent in the 'hopper-infested areas, according to John Durkin, New Mexico A&M extension entomologist.

Plans for spraying large areas of rangeland with multi-engine aircraft are now being laid out.

Although the major trouble spots in the state in 1955 were on rangeland, cropland in several counties were also hit hard by the 'hoppers in 1955. Crops in Taos, Santa Fe and Mora counties suffered particularly heavy damage. In fact, in some areas in Taos and Mora counties, vegetable and pasture crops virtually vanished with the invasion of the army of 'hoppers.

Farmers in some sections controlled the 'hoppers before too much damage was done, but others who did not carry out control operations suffered heavy crop losses. Looming as the major trouble spot in 1956 are areas of cropland in Bernalillo, Mora, Rio Arriba, San Juan, Santa Fe, Taos and Valencia counties. All told, about 98,000 acres of cropland in these and other counties are expected to be infested next year. And unless farmers begin their control operations early, damage to crops is expected to be very severe in some areas of the state.

In 1955, a total of 458,003 acres of rangeland was sprayed for grasshopper control at a total cost of $205,675. Control operations on rangeland were carried out by the Grasshopper Control Project and the cost was divided equally by ranchers, the state and federal governments.

Approximately 10,620 acres of cropland in the state were treated for grasshoppers in 1955 at an estimated cost of $8,000.

Firms Register for Sales in California

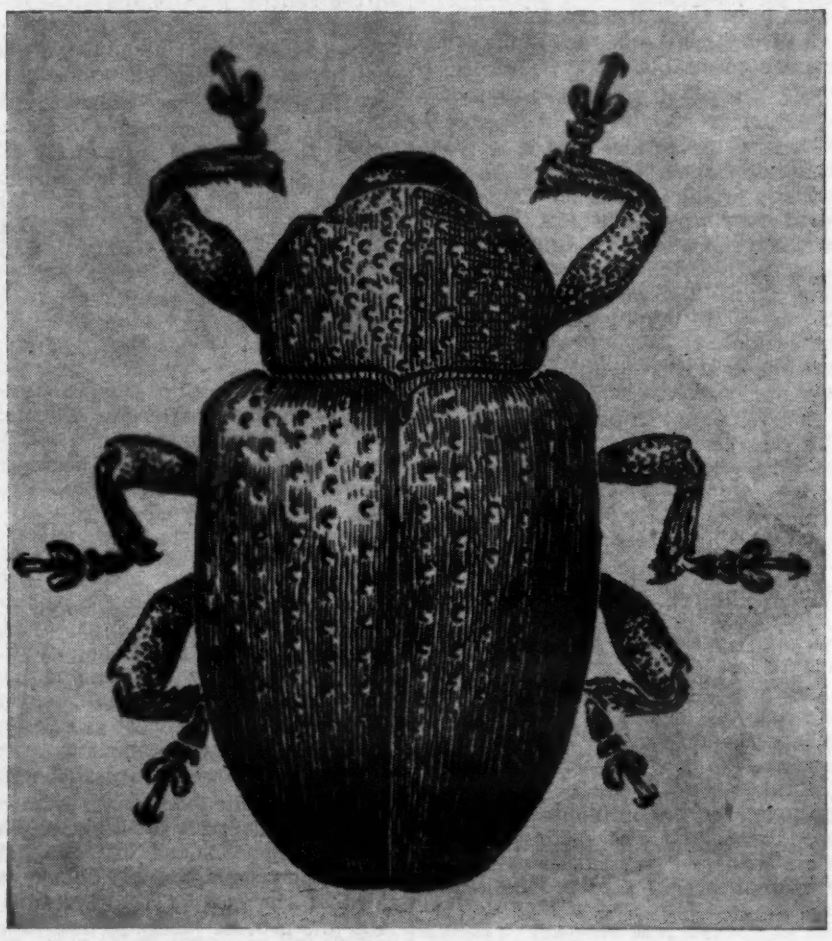
SAN FRANCISCO — Thirty-seven firms have registered in California between Sept. 20 and the middle of December to sell commercial fertilizers in the state.

According to the Bureau of Chemistry of the State Department of Agriculture, these firms have been added within a three-month period to the number existing as fertilizer sales firms for the fiscal year ending June 30, 1956. Of the 37, almost half, or 18, are registered in southern California, 14 firms are in northern California, and the remaining five are out of the state including two in Oregon, two in Arizona and one in Texas.

During the same period a total of 23 firms registered to sell agricultural minerals. Of this number, ten are from northern California, eight from the southern half of the state, and five from out of the state, including one each from Arizona, Oregon, Washington, Michigan and Texas.

BUG OF THE WEEK

Mr. Dealer—Cut out this page for your bulletin board



Cowpea Curculio

How to Identify

In the adult stage, cowpea curculio is a black, humpbacked, snout beetle usually about a quarter-inch in length. The larvae are whitish and legless, with yellowish-colored heads. They measure up to a third of an inch in length.

Damage Done by Curculio

The adults eat small holes in pods and peas, while the larvae feed within the green seed of the plant. In addition to the damage done by punctures made by adults, eggs are laid in the holes eaten through the pods. This insect seldom flies and has the characteristic of remaining motionless, "possum-like" when disturbed even slightly.

Control of Cowpea Curculio

Since this pest is found on the edible portion of plants, particular care must be taken in the timing and quantity of any insecticide recommended and used for control of the curculio. State and local recommendations should be ascertained and manufacturers' instructions on the package should be followed precisely to avoid the presence of toxic residues on the fruit at harvest time.

Illustration of Cowpea Curculio furnished Croplife through courtesy of U.S. Department of Agriculture.

Previous "Bug of the Week" features are being reprinted in attractive 24-page booklet, priced at 25¢ single copies; reduced rates in quantities. Write Croplife Reprint Dept., Box 67, Minneapolis 1, Minn.

OVER THE COUNTER

(Continued from page 9)

too much room in the field and use up too much available moisture and plant food for what they produce.

"The best corn is that which is well bred and will respond adequately and favorably to the environment to reproduce itself to the maximum extent," says Dr. Hoffer.

"With the newer higher yielding hybrids, farmers can grow twice as many ears per acre. Further, forthcoming hybrids will be able to use available moisture and plant nutrients more effectively."

A Good Sign

There's at least one Minneapolis golf club which is preparing for a good stand of grass on its fairways and greens during the coming year.

While driving to work one morning recently, this correspondent spotted a flat bed truck from this particular golf club piled high with bags of fertilizer.

The green bags made a vivid contrast against a background of snow-covered streets and cars, all of which were partially obscured by billowing vapors from the auto exhausts. The scene further was a reminder that spring cannot be so far away at that. Another conclusion: Some enterprising fertilizer dealer has been at work getting his spring sales lined up and having at least one customer to take January delivery.

The Road To Ruin

The negative approach to selling is not suggested as one which will set sales records, every dealer knows. Occasionally, we read an article, or hear a speaker talk on the negative but humorous approach to the business of selling fertilizer. These talks and articles are often quite entertaining.

An example is the talk made by Howard H. Hawkins, Golden State Plant Food Co., Glendora, Cal., at the 32nd annual convention of the California Fertilizer Assn. at San Francisco. He titled his talk, "Ten Ways to Sell Fertilizer and Ruin the Business." Naturally, Mr. Hawkins' approach takes the ridiculous vein but what he says is effective in pointing out some of the abuses which can, and in some cases, exist in the fertilizer selling business.

Mr. Hawkins' comments:

1. Pose as an expert. The farmer may be experienced and observing but discover hidden conditions which will ruin him unless he uses your material at once.

2. Run down all other forms of fertilizer. If you sell aqua or gas, pan the drys. Don't give any credit for anything except what you are selling.

3. Run down your competitors. Intimate that San Quentin could well turn loose those it now contains and fill the cells with fertilizer salesmen (other than yourself) and the general level of society would be improved. This will tend to give the farmer confidence in the industry.

4. Play down his knowledge. If the farmer feels he knows certain things about his soils needs, and they don't happen to be what you are selling—run them down. If he quotes the university or extension service, sneer at them and their work. Quote remote trials on burley tobacco in West Virginia to prove your point.

5. If he does buy—oversell him. If he really needs 500 lb. per acre force 1000 lb on him. Then if he can't pay for the extra amount sue and drive him out of business, so he won't be around to be a temptation to other salesmen.

6. If he appears not to be too well informed, clip him. Sell him lake bottom deposits of mysterious origin from Nevada at the price of good mixed fertilizers. A foolish farmer should be separated from his dough.

7. If mistakes occur in delivery, price, etc. disclaim all responsibility. Blame brokers, truckers, railroads, anyone but you. This will get you off the hook but probably make the farmer think the industry is made up of liars and crooks.

8. If your price is high; there are three things to do: (a) Drop it and cuss like everything. (b) Tell him the competition is stealing his supplies so naturally he can sell cheaper. (c) Explain that your costs of doing business are such that your price must stay where it is. This third explanation will probably shock him so that he will buy anyway.

9. Sell the farmer on excess credit. This also will help him to go broke sooner. Don't keep his payments and deliveries in line and he will soon go broke and if you are lucky you can go with him.

10. If he does get into trouble financially, forget about all the other creditors and pounce for yourself. Agree to work it out and then go around and attach everything loose, before the other creditors get wise. This will get you your money and make for ill feeling with all the others.

Selling the uninformed farmer:

1. The easy ones are now sold. What is left will be the tough ones.

2. Gain his confidence in you as an individual.

3. We may have to give out some free supplies.

4. New fields—such as phosphate in the San Joaquin Valley.

West Texas Agricultural Chemical Conference Set for Feb. 14-16

LUBBOCK, TEXAS—The third annual West Texas Agricultural Chemical Conference has been set for Feb. 14-16 at Lubbock, according to J. C. Porter of Wichita Falls, Texas, who is head of the agricultural committee of the West Texas Chamber of Commerce.

The conference is sponsored by the West Texas Chamber of Commerce, Texas Technological College and the Texas A&M College System. The conference will serve as a means of presenting the latest information and most effective uses of agricultural chemicals.

Subjects on which speakers will address the group include:

"Effect of Soil and Climate in Fertilizer Response in Sub-Humid Environment," "Climatic Influence on the Effectiveness of Insecticides," "The Interdependence of Chemicals and Agriculture," "Climatic Influences on the Effectiveness of Herbicides," "Chemicals in the Protection of Stored Grains," and "Antibiotics and Hormones in Agricultural Production."

Texas Fertilizer Firm Installs New Scale

CLINT, TEXAS — The Southwest Fertilizer and Chemical Co. recently bought one of the largest scales in this area. The firm had a huge Fairbanks-Morse scale installed at its phosphate plant. It is 45 feet long, has a 50-ton capacity, and cost $5,000. It will be used primarily to weigh materials leaving the plant.

Officials of the company also announced the employment of Gale F. Washburn, Jr., as sales representative in Clint. He attended the University of Nebraska before coming to the Valley, where he was more recently manager of a large irrigated farm.

CORN TRIALS

COLLEGE STATION, TEXAS — Four hybrids led all others in the 1955 Texas Agricultural Experiment Station's corn performance tests with an average yield of 60 bu. per acre. These were Texas 26, 28, 30 and 32. All were developed and released by the station. The tests were conducted in 15 locations throughout the state.

Books on Pesticides

WEEDS—Second Edition (1955)

W. C. Muenscher

Entire book has been revised and reset, with descriptions of seventy weeds added to the original list of five hundred, plus twelve new full-page plates depicting nineteen kinds. Keys and full descriptions provided for identification with detailed illustrations of 331. Types and sources of weeds, their means of reproduction and dissemination, and the amount of damage they inflict on crops. Specific directions for control, with reference to chemical methods of recent discovery **$10.00**

CHEMICAL BUSINESS HANDBOOK

Dr. John H. Perry

1,300 double column pages, the equivalent of several average books; 700 illustrations, by 124 contributors. Market research data section is 280 pages, business mathematics 200 pages, financial and accounting 142 pages, research and development 150 pages, sales and advertising 92 pages, twenty sections in all. The book deals with chemical management problems and is useful to technical men, engineers and executives, in the chemical and allied fields. Dr. Perry is editor of the Chemical Engineers Handbook, a companion publication **$17.00**

DDT and NEWER PERSISTENT INSECTICIDES

T. F. West and G. A. Campbell

The first and major part of book is devoted to the physical and chemical properties, manufacture, formulation and applications of DDT. The second part deals with other chlorinated hydrocarbons whose insecticidal properties have been discovered recently and compares these new insecticides with DDT. The preparation of aqueous suspensions, solutions, emulsions, and dusts containing DDT, the compatability of DDT with other insecticides, fungicides and additions are covered in detail. Contains dozens of tables on the solubility of DDT in various solvents, the catalytic activity of accessory substances in the presence of DDT, analogues of DDT, the comparative toxicity, hydrolysis and solubility of DDT analogues, the toxicity of DDT for almost all important insects, etc. Many illustrations **$8.50**

APPLIED ENTOMOLOGY, Fifth Edition

H. T. Fernald and Harold H. Shepard

This text since 1921 has had an outstanding record of usefulness. The Fifth Edition preserves the general organization and coverage, with changes to improve the presentation and to incorporate new knowledge. Contains chapters on anatomy, physiology and development. The economic importance and control of insects are discussed in a general way with much attention to insecticides. The classification of insects is emphasized, with examples drawn from species conspicuous for being very harmful or decidedly beneficial. Specific control measure included for injurious forms. Last chapter considers other pest animals closely related to insects. 385 pages **$7.00**

THE CHEMISTRY AND ACTION OF INSECTICIDES

Harold H. Shepard, Entomologist, U. S. Department of Agriculture, formerly Associate Professor of Insect Toxicology, Cornell University.

Treats the chemistry of insecticides, the history of their use, their commercial importance here and abroad, the nature of the major uses, the influence of environment on effectiveness. Materials are arranged according to their chemical relationships. Two chapters relating to organic compounds largely new as insecticides. Illustrative data in form of tables, and a convenient appendix of equivalents arranged for practical use in the field. 504 pages **$7.00**

WEED CONTROL

W. W. Robbins, A. S. Crafts, and R. N. Raynor

A textbook-manual presenting a modern view of the rapidly developing field of chemical weed control. Reports in detail the research on which most modern herbicide usage is based. Weeds, their reproduction, prevention, biological control, chemicals in weed control. Herbicides, foliage contact applications, hormone-like substances, root applications, evaluations of combinations of chemical applications. Weeds of grasslands and turf. Special weed problems, cropped and uncropped areas. Published 1952. 503 pages, 155 illustrations **$8.00**

INSECT, FUNGUS AND WEED CONTROL

Dr. E. R. de Ong

The information is grouped according to field of application rather than to chemical composition or nomenclature. Chapters on insecticide label, seed disinfectants, herbicides, forest insects and diseases, livestock insects, and the pests found in household and industry. Fumigation of warehouses, residual sprays and preservatives for fruits, vegetables and wood products are covered. An up-to-date guide on pest control with the needs of operators, agricultural and structural specialists carefully considered. Shippers and warehouse personnel will find the book useful..... **$10.00**

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What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

President Eisenhower, in his state of the union message to Congress on Jan. 5, said he would recommend a soil bank to handle the problem of diverted acres and to correct the overexpanded agricultural plant of the country. . . . Olin Mathieson Chemical Corp. combined its eastern and western divisions under the direction of Sam L. Nevins, vice president of the corporation. Edward Block was made executive vice president with responsibility for the operation of the phosphate chemical and plant food divisions.

The charter meeting of the Weed Society of America was held in New York Jan. 4-5, with more than 400 registered for the opening sessions. Robert H. Beatty, American Chemical Paint Co., Ambler, Pa., is first president of the national group.

Despite decreased numbers of corn borers in a number of the corn-producing states, the U.S. Department of Agriculture predicted that Iowa, Illinois, Maryland and other areas may face larger populations of the borer in 1956. This statement was made following an extensive survey conducted by the Agricultural Research Service of USDA.

Rice acreages were reduced to 1,639,984 acres by the U.S. Department of Agriculture. This 1956 allotment is smaller than that of last year by 288,350 acres. . . . J. Newton Hall was named western manager of the Insecticides division of Olin Mathieson Chemical Corp. His headquarters will be in Denver, Colo.

The Ohio Pesticide Institute held its annual meeting at Wooster, with good attendance from all parts of the state and surrounding areas. . . . W. L. Popham was named director of crops regulatory programs for the Agricultural Research Service, to succeed Avery S. Hoyt, former chief of the old Bureau of Entomology and Plant Quarantine of USDA.

In its preliminary report on fertilizer use in the U.S. and territories, the U.S. Department of Agriculture said that consumption of fertilizer, tonnage-wise, was down 1.3% from the 1953-54 figure, but that the estimated quantity of primary plant nutrients was up 151,000 tons, or 2.6% over the previous fiscal year. Consumption of primary plant nutrients for 1954-55 was 6,047,000 tons. Total tonnage for all fertilizers was estimated to be 22,468,000 tons.

The American Phytopathological Society discussed new methods for control of various plant diseases at its 47th annual meeting at Atlanta, Ga. Reports indicated that antibiotic treatments were effective in control of downy mildew of lima beans, late blight of tomatoes, and bacterial leaf spot of sesame. Dr. Helen Hart, University of Minnesota, became president of the national group.

Sulfur output hit a new record of 6,900,000 long tons in 1955, according to an estimate by Freeport Sulphur Co., New York. This figure represents an increase of 250,000 tons over the total output of 1954.

Use of superphosphate on wheat fields in Kansas was reported to have brought about unusual yields, according to information from speakers at the 1955 soil fertility conference held at Kansas State College. Best wheat yield in a test plot was 58.7 bu. where 25 lb. potassium an acre had been applied.

W. J. F. Francis was named vice president in charge of sales for American Potash & Chemical Corp. He will continue to make his headquarters at Los Angeles, Cal. . . . John O. J. Shellenberger was appointed director of marketing for the American Chemical Paint Co., Ambler, Pa. . . . James Wirwille was appointed to the sales staff of Velsicol Chemical Corp. to represent the company in a number of eastern states.

Reports from Louisiana and South Carolina indicate that larger numbers of boll weevil entered hibernation this year than for several years past. This year's average represents 2.6 times more weevils than were found in the previous high record year of 1953 and five times the average number found a year ago.

An entomological team of USDA and Iowa State College men described their methods of controlling corn borer with granular insecticides, at a meeting at Ames, Iowa, Dec. 9. They reported that the granular method of borer control has now been added to the list of recommended control measures in the 14 states of the north-central region.

The Ozark-Mahoning Co., Tulsa, Okla., announced plans to build an ammonium phosphate plant at Tulsa. The plant will cost more than a million dollars. About 500,000 tons a year of high analysis water soluble complex fertilizers will be produced by the new facility.

American Cyanamid Co. announced plans to build a new triple superphosphate plant at Brewster, Fla. This will be part of the company's $40 to $50 million expansion and modernization program scheduled for 1956. It will be the firm's first facility for production of upgraded phosphate.

Grasshopper infestations in 1956 promise to be more than three times that of 1955 on western rangelands, the USDA said. Mormon crickets are expected to be present in about the same numbers as they were this year. . . . Lion Oil Co. formed development and engineering sections within its manufacturing department.

Weed control, insect control, defoliation and fertilization were named as necessary practices to achieve lower unit-of-production costs at the first annual Beltwide Cotton Production Conference held at Memphis, Tenn. Dec. 15-16. About 1000 persons were in attendance.

American Cyanamid Co. announced a new systemic insecticide, Thimet, which the makers stated has been successful in the control of insects in cotton fields.

Program Announced For Annual Texas Fertilizer Conference

COLLEGE STATION, TEXAS—Problems and developments in the fertilizer industry in Texas will receive attention Jan. 5-6 at Texas A&M College. Those are the dates of the annual Texas Fertilizer Conference.

Dr. J. F. Fudge, state chemist and chairman of the conference, said that between 125 and 150 persons are expected to attend. Last year's attendance was more than 150.

Dr. J. E. Adams, dean of Texas A&M School of Agriculture, will welcome the group to the campus, and James D. Dawson, Jr., Fidelity, Houston, will respond. Dr. Dawson also will lead industry representatives in a panel-type report on the "Fertilizer Outlook for 1956."

O. J. Moss of the Agricultural Research Service, U.S. Department of Agriculture, will discuss "The ASC Program for 1956." Frank Boyd, agronomist, Virginia-Carolina Chemical Corp., Montgomery, Ala., will speak on "Fertilizer Grades and Ratios."

Dr. J. B. Page, head of the college's agronomy department, will serve as chairman for the afternoon session Jan. 5. Subjects to be discussed during this session include:

"Influence of Quality of Water on Plant Nutrition," F. M. Eaton, plant physiologist, USDA; "Further Advances in Soil Physical Factors Affecting Plant Nutrient Uptake," Dr. E. R. Lemon, agronomy department and USDA; "Soil and Water Management Practices Affecting Water Utilization by Plants," M. E. Bloodworth, Lower Valley Experiment Station, Weslaco, Texas; "The Interrelation of Nitrogen and Water Utilization by Coastal Bermuda," F. L. Fisher, Agronomy Department.

Dean Adams will be master of ceremonies, and Dr. R. D. Lewis, director of the Texas Agricultural Experiment Station, will be the speaker during a banquet the evening of Jan. 5.

The Jan. 6 session, with Dr. Fudge as chairman, will include:

"Some Effects of Fertilizers on the Yield of Cool and Warm Season Vegetable Crops in 1955," D. R. Paterson, horticulture department; "Cotton Fertilization in the Northern Blacklands and Grand Prairie," C. O. Spence, county agent, Sherman, Texas; "Secondary Element Requirements of Soils of East Texas," F. L. Fisher; "Fertility Studies in the Central Blacklands," R. M. Smith, Blacklands Experiment Station, Temple, Texas; "Influence of Anhydrous Ammonia and Phosphorus on the Seedling Disease Complex of Cotton," L. S. Bird, plant physiology and pathology department; "Your Community Pasture Contest," Ted Trew, extension pasture specialist, and "Correlation of Soil Tests with Field Response Date," A. G. Caldwell, agronomy department.

Cotton Replacing Alfalfa In Rio Grande Valley

EL PASO, TEXAS — Despite reduced acreage allotment, cotton is slowly replacing alfalfa on many of the Rio Grande Valley farms. Part of the old alfalfa fields is being plowed up so that cotton can be planted on them in the spring.

There are two reasons for this: In an effort to increase cotton yields, farmers have found that cotton following alfalfa in a rotation will produce from 20 to 40% more. Also farmers are becoming more reluctant to grow alfalfa because of the threat of the spotted alfalfa aphid.

By RAYMOND ROSSON
County Agent, Washington County, Te

We'll admit that Col. Status is a very dear friend of ours. We've planned and worked with him; yes, we've dined and played with him during 1955, and 'tis going to be very hard to give him up; however, we are admonished to turn our backs on him and look to Dr. Janus.

The ancients said Janus was a mythical god, who was presumed to look both ways, forward and backward. We want to go along with the doctor and that "forward look" for 1956.

My farm friends seem to be looking forward earlier this year than in any of the past years. . . . They are already coming into the extension office with their soil tests sheets and with sharpened pencils.

You know sometimes I think "farm pencils" are about the best tool a farmer can use! That is, he really gets after facts.

Dave Treadway was in yesterday. He is a very small farmer with only 38 acres of cropland and actually grows one (1) acre of corn on the place. Said, "We helped him on one acre last year and he made some 50 bu. of good corn, and he wants to make 150 this year. . . . We told him to go to his dealer and get 1,000 lbs. of 10-10-10 and then add 30 lb. N when his corn was about 8-10 inches high.

Bert Wolfe also was in. He farms some 400 acres. Corn, wheat, alfalfa, pasture, tobacco and carries some very good beef cattle, plus a few hogs. Bert wanted us to figure out his fertility needs, for all crops, as we did last year, according to his needs.

This boy isn't satisfied unless he gets some 2,500 lb. of tobacco, 100 bu. corn; 35 bu. wheat and 3 tons alfalfa per acre, along with 400 lb. or better on his cattle.

To cap it all he expects to carry a grown animal on the average 1 acres of pasture. . . . He fertilizes his pastures well. . . . He's a pen pusher.

This thought . . . the farmer, dealer and county agent should make a mighty good team, for the long haul of 1956.

Joins Webfoot

PORTLAND, ORE.—Leo A. Wiedman has been appointed to the sales and business staff of Webfoot Fertilizer Co., Inc., Portland, according to an announcement by Alec Runciman, manager. Mr. Wiedeman has been affiliated with the Kerr Gifford organization.

RANGE MEETING

LARAMIE, WYO.—Several hundred persons from Wyoming and other western states are expected at the ninth annual meeting of the American Society of Range Management Jan. 24-27 in Denver. Several nationally known speakers, including E. L. Peterson, assistant secretary of agriculture, are scheduled to address the meeting.

FARM PROGRAM

(Continued from page 1)

...ld either in kind or in cash by ...modity Credit Corp.

...e is what the Chief Executive ... Congress on this point: "In the ... of wheat and cotton, I look to a ...tary reduction equivalent to ...bly one fifth of the acreage ...rwise permitted by allotments—...ps 12 million acres of wheat ... million of cotton. It should be ...ical to include wheat already ...ed, if it is incorporated with the ... as green manure, or by other ...oted practices. This should make ...ossible for more farmers to en... the program immediately and ...eby start at once to work down ...pluses."

...ch land voluntarily taken out of ...duction of wheat and cotton—... such other crops, corn for ex..., which Congress may designate ...uld be withheld from all harvest ... cash cropping and would be ...ed even for grazing purposes.

...o compensate farmers for immedi... cooperation in the "acreage re...e program," the government ...ld pay them in certificates re...nable either in kind or in cash, ...able on CCC.

...he second aspect of the soil ...k is the long range program, ...ned by the administration as ...e conservation reserve. For this ...se, the President recommends ...t farmers take from field crop ...duction 25 million acres and put ...m into forage, trees and water ...rage land, regardless of the crop ...w produced.

...he message expressed the confi...ce that much of this 25 million ...e goal could be accomplished in ...6.

...o persuade farmers to accept this ...posal to retire marginal land, the ...inistration asks that the govern...nt pay a fair share of costs of es...lishing the necessary conservation ...ctices up to a per acre maximum ...e fixed by regions.

...here would be a government ...eement to maintain payments over ...eriod of years necessary to es...lish the new use of the land.

...o finance this proposal, the ad...istration asks that Congress make ...art with an authorization of $350 ...lion the first year and continue ... program at that level for three ...rs.

...ccording to top Republican con...ssional leaders, this plan may miss ... goal of reducing production in ... with expected disposal of surplus ...modities. In fact, one responsible ...der told Croplife that the amount ...money available, if fully effective ...persuading farmers, would remove ...ut 20% of the land necessary but ...t result would reduce production ...only 10%.

...n the soil bank proposal there is ...proximately $550 million, of which ...0 million is in requested new ...ds for the long range or conserva... reserve phase. It is estimated ...t about $200 million will be avail...e to farmers for voluntarily reduc... acreage allotment crops in the ...eage reserve program.

...To do the job properly, trade and ...ngressional experts say that not ...s than one billion dollars in new ...nds would be necessary each year ...r a period of not less than three ...ars to bring production into line ...th demand and at the same time ...rmit the government to dispose ... the surpluses of wheat, cotton ...d rice.

...he acreage reserve program is ...ed primarily at wheat, cotton and ...—the currently major surplus ...blems in the farm community. ...n is also on the deck as a trouble ...ker.

...n the subject of wheat, the White ...se would exclude from acreage ...tments and marketing quotas, ...at grown and used on farms where ...wn. The administration would also contemplate a feed wheat program, wherein wheat might be sold by producers in certain areas—when of less than desirable milling qualities—at price levels which would not disturb feed grain price levels.

On balance, before Congress gives this plan a going-over, it would seem that the plant food industry may again show the farmer that modern farming practices are better than the medication from the national politicians.

Never before has the equation of farm cost reduction been so clearly evident.

The administration describes farms as the "time-proven commercial family farm." The President's message said, "Accordingly farm policy must encourage such farms, sufficiently large and productive to provide satisfactions in farm living equal to those enjoyed by other Americans."

It is known within economic circles that the family farm may obtain better net profits per year from greatly reduced acreage—if proper practices are followed—than the family farm could obtain under the "soil bank" proposal.

The President in his message inferred the possibility of bushelage and poundage controls over crop land rather than acreage allotment and marketing quotas. He also recommended to Congress that it apply a maximum limitation on price support payments to any individual or corporate farmer.

Last week Croplife received an important communication from a rigid high price support advocate for cotton, Rep. Jamie L. Whitten (D., Miss.). Rep. Whitten wrote as follows:

"My attention has been directed to an article entitled 'Limitations on Bushels or Pounds per Acre on the Political Horizon,' which appeared in Croplife on Jan. 2, 1956.

"My feeling is that we will eventually come to unlimited production, with supports limited to a given number of pounds or bales per farm based on domestic production."

In short, as Croplife noted previously, Rep. Whitten would prefer to return to the field crop labor for cotton and other crops at some high level of price support rather than face up to the necessity of cost reduction per unit of production.

Few informed persons here believe that the administration program will do more than hold the sliding farm income at its present level.

ZENO P. METCALF DIES

RALEIGH, N.C.—Dr. Zeno P. Metcalf, entomologist, who had been a member of the North Carolina State College faculty for more than 43 years, died recently at the age of 70. He was entomologist at the state experiment station from 1912 to 1950.

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Pulp Mill	✓	
Bleach Plant	✓	
Paper Mill	✓	
Multiple Bag Plants	✓	
Natural Kraft	✓	
Colored Kraft	✓	
Bleached Kraft	✓	
Creped Kraft	✓	
Wax Laminated Kraft	✓	
Asphalt Laminated Kraft	✓	
Wet-Strength Kraft	✓	
Water Repellent Kraft	✓	
Stak-LOK Super Rough Kraft	✓	
Valve Bags—sewn or pasted	✓	
Open Mouth Bags—sewn or pasted	✓	
Flat Sewn Valve Bags	✓	
Flat Sewn Open Mouth Bags	✓	
KRAFT-lok Valve Closure	✓	
Creped Tape	✓	
Gummed Tape	✓	
Filter Cord	✓	
Sewing Thread—(the only material we do not produce ourselves)		
1-2-3-4 Color Printing	✓	
Art Department	✓	
Bag Development and Research	✓	

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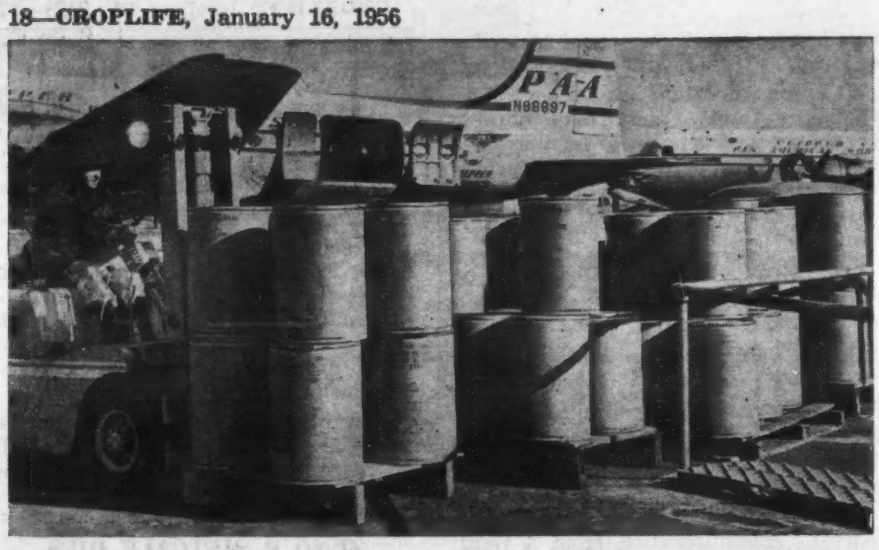


SHELL SHIPMENTS—Emergency shipments of dieldrin, an insecticide manufactured by Shell Chemical Corp., are loaded at Idlewild Airport for shipment to Buenos Aires, where it will be used in fighting one of the worst grasshopper plagues Argentine farmers have experienced in years. A total of 106,000 pounds is being air-lifted — enough to protect approximately 1,600,000 acres. A similar shipment from Shell was sent to fight the plague of locusts that was threatening crops in the Middle East three years ago. The insecticide is manufactured in Denver.

Farm Production Control-Price Plan Proposed

URBANA, ILL. — A federal production control—price support program containing a number of new features has been proposed to administrative officials of the U.S. Department of Agriculture by H. C. M. Case of the University of Illinois College of Agriculture.

Mr. Case was for many years head of the Department of Agricultural Economics of the College of Agriculture and served as consultant to the U.S. Senate Committee on Agriculture and Forestry in 1947-48.

His proposed program would provide for (1) increasing the rate of payment for soil conservation in direct proportion to the per cent of tillable land in soil conservation use, and (2) increasing price supports to a farmer for crops to be sold in proportion to the increase in per cent of tillable land in soil conservation use. The top price supports on crops would be below the present high-level supports. Part of the financial benefit of the plan would be in the form of the soil conservation payments.

Under his plan, conservation payments per acre for land in grass or legume roughage or left fallow would be stepped up as farmers increased the number of acres devoted to these conservation crops to a desired level.

Using central Illinois as an example, Mr. Case points out that having 25% of the tillable land in conservation crops is considered a high conservation rotation. Using 100 acres as the base, a central Illinois farmer might get 80¢ an acre for the first acre he put into conservation crops, $1.60 for the second, $2.40 for the third, etc., until for the 25th acre he would receive a payment of $20 an acre. Total payments for the 25 acres in conservation crops would amount to $260. On lower grades of land, the rate of payment would be lower but the principle of accelerated payments would work the same. The actual payment made to farmers for soil conservation land use would be based on a formula including the total net farm income of the preceding year.

Under the second part of the plan, a farmer would receive a price support for his principal crops ranging from 50% up to 70 or 80% of parity. A farmer with only the average amount of land in soil-conserving crops for his county would receive a price support of 50% of parity, but as he doubled the land in soil-conserving use he would earn 70 to 80%.

Limiting the crop loan but making a direct payment for tillable land in soil conservation use, Mr. Case claims, would encourage the use of grain crops for feeding livestock.

E. J. Bock Named to Marketing Post by Monsanto Chemical

ST. LOUIS—E. J. Bock, Monsanto, Tenn., has been named associate director of marketing for Monsanto Chemical Co.'s Inorganic Chemicals Division, it was announced recently by Tom K. Smith, Jr., division director of marketing.

Mr. Bock, who has been plant manager of Monsanto's elemental phosphorus plant at the Tennessee location since 1948, will assume his new duties in the division headquarters in St. Louis immediately.

A native of Iowa, Mr. Bock was graduated from Iowa State College with a B.S. degree in 1938 and an M.S. degree in 1940, both in mechanical engineering. He joined Monsanto at the company's Anniston, Ala., plant the same year. He filled various plant and engineering capacities at Anniston, Trenton, Mich., and Monsanto, Tenn., plants before he was made plant manager.

J. L. Whiteside, Monsanto, Idaho, has been named plant manager of the firm's elemental phosphorus plant at Monsanto, Tenn., it was announced by H. F. Weaver, Inorganic Chemicals Division's director of manufacturing.

At the same time it was announced that Robert R. Rumer, who has been production superintendent at the Tennessee plant, will succeed Mr. Whiteside as plant manager in Idaho.

Also at the Tennessee plant, Ralph Neubert, who has been maintenance superintendent, will become production superintendent, and William G. Allen, who has been a maintenance supervisor, will become maintenance superintendent.

American Potash Building Facility to Make Technical Parathion

LOS ANGELES — A new facility for the manufacture of technical parathion is under construction at American Potash & Chemical Corp.'s Eston Chemicals plant at Los Angeles (Vernon), it has been announced by Peter Colefax, president.

Output from the plant, which is scheduled to go into production early in 1956, will be solely for the company's needs and for the western requirements of California Spray-Chemical Corp., Richmond, Cal.

American Potash & Chemical Corporation previously had obtained parathion from outside sources for its production processes.

HORTICULTURISTS TO MEET

ROANOKE, VA.—The 61st annual session of the Virginia Horticultural Society will be held in Roanoke, Jan. 23-25.

WORLD REPORT

By GEORGE E. SWARBRECK
Croplife Canadian and Overseas Editor

Aerial top dressing has taken another major step forward in New Zealand, a country which has contributed much in recent years to the advances made in this method of application.

Just introduced is a twin-engined Dakota plane called a Hi-land Duster. It can carry up to 5 tons of fertilizers and is adapted for the distribution of granulated materials over a radius of 40 to 50 miles.

Hitherto, the small Tiger Moth, carrying only 5 cwt. of material, has done the bulk of the work for New Zealand farmers, and it will continue to be used for certain types of hilly country. But it was apparent that operations would have to be on a bigger scale if there was any hope of covering at least the major portion of the 13 million acres of pastoral country capable of being top-dressed from the air. Even so, this goal cannot be reached unless there is a major expansion of fertilizer production facilities.

The fertilizer manufacturers are looking ahead. New plants will have airstrips alongside, for by this means distribution costs can be cut.

The Dakota, a former war plane, was converted at a cost equivalent to $126,000, and a special loading device can put in the fertilizer in less than two minutes. Every flight costs the farmer $210 and his money is spent in less than 20 minutes. About 20 flights are made in a day.

Potash Prices Fall

The New Zealand farmers are benefiting from a fall in the price of potash fertilizers. The slide is attributed to the keen competition between European and American suppliers. Muriate of potash has been retailing at the equivalent of $70 ton.

One firm made a bulk purchase of U.S. potash. Others are buying from East and West Germany and from France in single sacks, a substantial saving on the double jute bags usually employed for the overseas markets.

Greek Plant

As part of a government program to stimulate food production in Greece, Chemical Products and Fertilizers, Ltd., has increased the output of fertilizers at its Piraeus plant from 60 to 100 tons a day. A new 100-ton plant, presently producing ammonium phosphate, but designed by Dorr-Oliver, Inc., Stamford, to manufacture either tripe superphosphate or ammonium phosphate, has replaced the 60-ton tripe superphosphate installation designed by the same company and initially put into operation in 1934.

Evidence of recent advances in the technology of fertilizer plant design is the reduced floor space required for the new plant—only one quarter to one third that of its predecessor.

Piraeus is the port for Athens and incoming shipments of phosphate rock from Tunisia are easily handled.

In the past, manufacture of phosphoric acid, ammonium phosphate and triple superphosphate from this type of rock has been difficult and in instances the rock had to be calcined prior to processing. The Greek firm, however, has not experienced any difficulty in handling the uncalcined rock.

Phosphoric acid is manufactured using the Dorrco Strong process which produces 32% P_2O_5 from sulfuric acid and phosphate rock. Following a practice originated abroad and recently introduced in the U.S., separation of this acid from gypsum is accomplished by a traveling pan—endless belt type filter. This unit was supplied by Dorr-Oliver S.p.A in Milan, the organization by which it was originally developed. The rest of the equipment came from the U.S.

Grasshopper War

Both Canada and Argentina are having grasshopper troubles. Entomologists have warned that certain districts of Manitoba may expect light to moderate infestation in 1956. Control methods, mainly chemical sprays, are being readied.

The Argentinian problem is centered on the wheat and corn growing areas but the arrival of chemicals from the U.S. is expected to aid in ending the plague within a month. Airplanes, helicopters and other equipment are being used.

Turkish Pyrites

Trade sources in Ankara say that an American firm has agreed to supply equipment to the value of $1.2 million for the Kure pyrites mine in Turkey.

Repayment is to be made in pyrites over a period of three years. The planned capacity of the mine is 100,000 tons a year, of which 75,000 tons will be available for export.

Finnish Agreement

A trade agreement between Finland and Eastern Germany, an addition to the one now running between the two countries, provides that in 1957 Finland will import from Germany 75,000 tons of sodium sulfate, 3,000 tons of ammonia sulfate, 50,000 tons of potassium, and 1,500 tons of calcium chloride. Listed among the goods to be sent to Germany is iron pyrites with an undertaking to provide at least 30,000 tons in the year.

New Plants

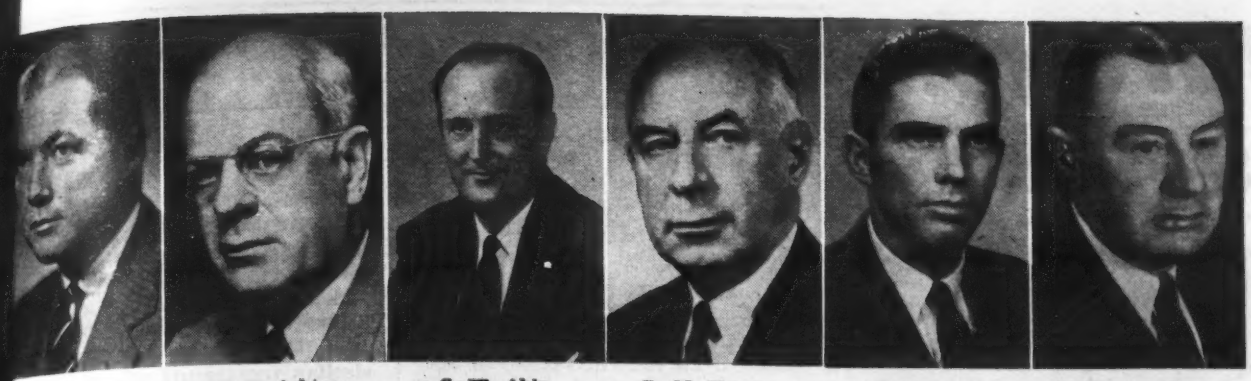
The pace of construction in the fertilizer world is quickening. From all parts of the world come reports every week of new plants ready to start up, or of plans for the construction of more.

An Australian source says that the purification plant to use gases for the treatment of lead concentrates to make sulfuric acid at Broken Hill Associated Smelters at Port Pirie is almost completed.

The new system of sulfuric acid production is expected to be in operation before the end of January. While figures of eventual output are not yet available, the yield of acid is expected to be at least 5,000 tons a year.

Two directors of Bullbrand Fertilizers, Ltd., Sarnia, Natal, have been visiting the U.K. and Germany to see the latest developments in fertilizer production. As a result of that visit they have placed orders for machinery with both British and German manufacturers and they are now proceeding with plans for the extension of their production facilities.

From France comes a report that Potasse et Engrais Chimiques is to build an ammonia factory at Grand Couronne, near Le Havre. Operations will begin sometime in 1957.



Judson Bemis | T. H. Ashton | C. W. Akin | R. M. Hersey | J. H. Eastman | M. F. P. Dallison

dson Bemis Appointed Executive ce President of Bemis Bro. Bag Co.

. LOUIS—F. G. Bemis, president emis Bro. Bag Co., has announced ral organizational and personnel ges in the company, effective 1, 1956.

dson Bemis, presently a vice ident, director and the director entral operations, with offices in neapolis, will become executive president, a newly-created posi- He will be replaced as director entral operations by T. H. Ashton, manager of the Omaha plant and s division. C. W. Akin, assistant ctor of sales, will become man- at Omaha.

M. Hersey, manager of the Min- olis general sales division, a di- or, and assistant director of sales harge of interdivisional accounts, become sales director for national unts and will devote full time is activity, which is also a newly- ted function in the company. He be succeeded as manager of the neapolis general sales division by . Eastman, and M. F. P. Dallison be special account executive e.

dson Bemis, who with F. G. is is a grandson of the company's der, became active with the com- in 1937 at the Omaha bag fac- where he worked in various es of the factory operation. In he entered the Boston office and that year transferred to the ral offices in St. Louis, in the ac- ting and auditing department.

1940 Mr. Bemis moved to the Louis sales division, and in 1942 transferred to Minneapolis as g manager. He was appointed ager there in 1945, and was ap- ted director of central operations 952. Mr. Bemis was elected a ctor of the company in 1939, be- assistant secretary in 1941, and elected a vice president in 1946. expects to make Minneapolis his quarters.

r. Ashton joined Bemis in 1919 salesman at the Omaha sales di- n and became sales manager e in 1932. He was named man- of the Omaha plant and sales ion in 1942.

r. Akin's career in the bag in- ry started in 1932 when he joined Jaite Co. at St. Helens, Ore. e's St. Helens plant was pur- ed by Bemis in 1941, and Mr. became sales manager under is ownership in 1946. In 1948 he appointed supervisor of paper sales for the entire company and sferred to the general offices in Louis. He was named assistant tor of sales in 1953.

. Hersey was employed by Bemis in 1914. In 1915 he went to the Bemis paper mill at Peoria, and in 1919 transferred to Minneapolis. He was made manager of the Minneapolis general sales division in 1940, and was appointed assistant director of sales for interdivisional accounts in 1951. He was elected to the board of directors in 1953.

Mr. Eastman and Mr. Dallison both joined Bemis at the Minneapolis central sales division, and both have been engaged in sales work for the entire length of their association with the company.

ed Market Director

HWAY, N.J.—James E. McCabe een appointed director of mar- lanning of the Chemical Division erck & Co., Inc., effective Feb. was announced recently by as J. Treacy, director of sales marketing. In his new position, McCabe will be responsible for ct merchandising, technical cus- service, and sales analysis, as market planning and develop- He succeeds Dr. Frank M. , who has resigned.

Donald P. Camp Heads General Chemical Sales For Dow at Houston

MIDLAND, MICH. — Donald P. Camp has been advanced to the post of supervisor of general chemicals sales for the Dow Chemical Co.'s Houston office, succeeding James C. Wheeler who has served in that capacity for the past five years, it was announced by Donald Williams, vice president and director of sales.

Mr. Williams said that Mr. Wheeler, who has been with the company since 1942, has relinquished his supervisory duties to devote full time to special assignment work with distributors who handle Dow chemicals in the Houston office territory comprising the state of Texas.

Mr. Camp has transferred to Houston from the company's St. Louis office where he has been a general chemicals salesman for the past four years. He came to Dow in 1949.

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In 1917 state fairs were awarding prizes for outstanding farm products just as they are today. Then as now, growers depended on Trona® MURIATE OF POTASH for high quality crops. For it was in 1917 that Trona, first to produce domestic Potash when World War I pinched-off foreign sources, shipped the first train-load to the east coast. For the next twenty years Trona was the *only* domestic source of Potash and today, in spite of AMERICAN POTASH AND CHEMICAL CORPORATION'S broad diversification program, is still one of the primary basic suppliers of high grade Muriate and Sulphate of Potash for Agriculture.

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The new multi-wall polyethylene-lined bags assure a free-flowing, easy-to-use product. And because Phillips *66* Ammonium Nitrate is *prilled,* the small, coated pellets resist caking, handle easily, flow freely.

In a fertilizer, it's *performance* that counts. And Phillips *66* Ammonium Nitrate delivers *outstanding* performance. This superior fertilizer is highly recommended for top dressing small grains, seed grasses; side dressing for row crops; preplant and broadcasting applications.

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TULSA, OKLA.—	1708 Utica Square	Phone: Riverside 7-7561
WICHITA, KAN.—	501 KFH Building	Phone: Forest 3-0294

WEED SOCIETY

(Continued from page 1)

Branch, Agricultural Research Service, USDA, New Brunswick, N.J.; and D. A. Schallock, Rutgers University, were reelected secretary and treasurer of the Northeastern group, respectively.

W. K. Lacy, Otsego (N.Y.) County assistant agricultural agent, Cooperstown, received an award of $100 and a plaque from the Northeastern section for his "personal initiative in furthering herbicidal efforts."

Clyde C. Dowler, graduate assistant, and N. M. Baughman, assistant professor, West Virginia Agricultural Experiment Station, Morgantown, received Northeastern's $100 award for the best paper among those submitted for publication in the proceedings of the 10th annual meeting. The winning paper was titled "Recovery of DNOSBP as Affected by Soil Properties."

The problems, progress and organization of weed control in England were outlined by G. E. Blackman, director of the Agricultural Research Council, Department of Agriculture, University of Oxford. Speaking at the Weed Society of America's Jan. 5 luncheon meeting, Mr. Blackman stated that "there is no organization of weed control in England." Research is based on the "empirical plan," he said.

During World War II, Mr. Blackman said, herbicidal work was done by conscripted botanists. With the end of conscription, there resulted a lack of the required personnel for this work, he reported. Among the specialists in the agricultural organization serving England's eight designated regions, there are no specialists in herbicides, Mr. Blackman said.

When a problem occurs, the local officer selects suitable farms for carrying out the experiments. Contacted are the "larger and more intelligent farmers." The sites are inspected by the liaison officer. Upon approval of the site, supplies and a book of instructions are given to the farmer.

Mr. Blackman reported that data and statistical work were done at Oxford. Copies are then distributed to the farmers and cooperating bodies, he said. He noted that three graduate and two research assistants in his department conducted 100 spraying experiments last year. Commenting on the participation of farmers in the research work, Mr. Blackman said, "We don't use farmers unless we know it's going to work."

Most farmers in England were reported not using dinitro compounds because of regulatory restrictions and toxicity. A widespread increase in wild oats was described as a problem resulting from overcropping in cereals during World War II. Mr. Blackman said that 6 lb. TCA per acre worked into the soil has shown to give up to 90% control in sugar beets.

Concluding his talk, the British agricultural director said that there was a "good deal of research being done on the part of larger firms."

Several sessions involving specific type crops and various aspects of weed control were held concurrently on Jan. 5. Day-long sessions were held concerning agronomic and horticultural crops, non-cultivated areas and ecological, physiological and edaphic aspects. Public health, turf, regulatory, aquatic weeds, teaching and extension were phases discussed in half day sessions. A total of 73 papers and two panel discussions was presented at the sessions.

A report on two promising herbicides for use on seedling legumes and other crops especially susceptible to present weed killers was presented at the agronomic crops session by W. C. Shaw. Mr. Shaw named these materials as promising 4(2,4-DB) and 4(MCPB).

Pre-emergence treatment with 4(2,4-DB) and 4(MCPB) was said to have resulted in good control of several annual broad-leaved weeds and grasses, with considerably less injury to corn, cotton, soybeans, peanuts and sorghum than from similar treatments with 2,4-D and MCPA.

Despite the encouraging results the U.S. Department of Agriculture representative emphasized that farm use of these two chemicals will not be recommended until more extensive trials are completed. At present the compounds are not commercially available.

The Miller Amendment as it affects herbicide research and use was discussed by a panel at the regulatory session. Jack Dreessen, National Agricultural Chemicals Assn., Washington, moderated the panel composed of Charles A. Herrmann, Food and Drug Administration, U.S. Department of Health, Education and Welfare, New York; J. T. Coyne, Pesticide Regulation Section, Agricultural Research Service, U.S. Department of Agriculture, Washington; and R. D. Sweet, Cornell University, Ithaca, N.Y.

Mr. Herrmann, chief of New York District, FDA, described some of the topics discussed at other sessions as "very provocative in suggesting the wide ramifications of the new law's application" to weed killers. Citing an example, he said that weed control in crops such as forage legumes or in pasture renovation immediately raises the question of how much spray residue can a cow consume before she begins to excrete it in the milk. He said that it was not possible in many cases to determine in advance the ultimate use of forage as it moves in interstate commerce.

Therefore, he added, the tolerance level established for a pesticide on forage must be that level which will contribute zero residues to milk if the forage is fed to dairy animals. A need for considerable research was seen to determine this level for each of a number of chemicals.

Discussing problems relevant to use of herbicides, Mr. Herrmann said "the time frequency and amount of spray cannot be calculated exclusively from the standpoint of the primary objective, namely controlling the weeds." He said that if the herbicides were used on or around food crops, "the effect upon such food crops from the standpoint of amount of residue must be so integrated in the calculations that the food will not be adulterated at time of harvest."

The question of cumulative effect was cited as another problem that must be considered in the application of herbicides. In working out recommended directions for use of herbicides, Mr. Herrmann said that the total residues remaining on the plant at the end of the growing season would have to be considered if the herbicide is a compound related to other pesticides used on the food crops themselves to control insects or plant disease micro-organisms. It was noted that application of the insecticides or fungicides may have been worked out to stay rather closely within set tolerances.

Educating the growers throughout the nation to follow safe directions for using pesticide chemicals in general was described by Mr. Herrmann as the most important problem. This, he said, demands the combined effort of manufacturers, agricultural extension services, state colleges and enforcement officials.

Data required to accompany ma

facturers' petitions for residue tolerances were discussed by Mr. Coyne. He said the data should be adequate to cover crops on which tolerances are requested. It was emphasized that data should be from tests using the same application rates and timing as those which will appear on the product's label as recommendations.

Citing one example, Mr. Coyne said that recommended directions called for one pound per acre with a 14-day interval between last application and harvest, while research data were based on the use of six to eight ounces with 21 to 40-day intervals between last application and harvest.

The U.S. Department of Agriculture representative said that there have been instances where experiment stations have not recommended some chemicals because no tolerances were listed in the Federal Register. He explained that there are herbicides which present no residue problem when used in accordance with the recommendations on approved labels. He cautioned against the use of such chemicals on crops and at times and rates other than those listed on the label. Certification of usefulness, Mr. Coyne said, only shows indication that the material's use is a necessity and does not constitute formal approval for use.

A doubt that all state recommendations were in agreement with information printed on labels was expressed by Mr. Sweet. He said that division of research has become necessary as a result of the requirement that no food crops sprayed with materials lacking label approval, residue tolerance or exemption of residue tolerance should reach commercial channels. This requirement, Mr. Sweet said, is now in effect in New York and pertains to crops grown on experimental farms.

The Cornell professor also said that there is a need for developing accurate measuring techniques for determining minute amounts.

During the discussion period which followed presentation of the panel reports on regulatory aspects of weed control, it was brought out that it will be necessary to reteach farmers the uses of weed killers. Noted was that farmers generally have accepted those chemicals used in demonstration plots at agricultural experiment stations. Now that some of the chemicals have not been approved, it will be difficult to get farmers to stop using them.

The Northeastern Weed Control Conference held its panel discussions in five concurrent morning sessions on Jan. 6. Discussed were new developments in weed control involving horticultural and agronomic crops, aquatic weeds, public health and forestry, and industrial weeds. Research coordinating committee reports was presented following each panel discussion. Individual papers were presented this year by publication in the Conference's proceedings.

Total registration for the three days was approximately 700.

Phillips Pacific Exercises Option to Buy Site in Washington

PULLMAN, WASH.—Phillips Pacific Chemical Co. has exercised its option to purchase some 200 acres of land along the Columbia River south of Kennewick, Wash. Options were taken on the land in December.

The company has made no announcement about plans for construction of a plant on the site, however. In July, a joint announcement by Phillips Petroleum Co., Bartlesville, Okla., and the Pacific Northwest Pipeline Co. was made relative to the formation of a new firm, Phillips Pacific Chemical Co. (Croplife, July 18, 1955, page 1.) At that time it was announced that the new firm intended to construct an ammonia fertilizer plant in southeastern Washington.

C. B. Brisendene

C. B. Brisendene Joins IMC Plant Food Division Market Staff

CHICAGO—C. B. Brisendene has been appointed to the marketing staff of International Minerals & Chemical Corp.'s Plant Food Division as advertising and promotion supervisor, Maurice H. Lockwood, vice president in charge of the division has announced.

Mr. Brisendene will have staff responsibility for directing the Plant Food Division's advertising and promotion program, reporting to Gerard J. Carney, marketing staff manager.

His experience in the advertising and promotion field has included posts as advertising art director for the Nesco Corp., as assistant advertising manager of the Ladish Co., and in the advertising layout department at Gimbel's, Milwaukee, Wis. He is a graduate of Columbia College, Chicago, Ill., and served in the U.S. Navy.

Western Potash Corp. Renamed; Financing Program Advances

CALGARY, ALTA.—Western Potash Corp. has been renamed the Continental Potash Corp. This was decided at the annual meeting of stockholders held in Calgary, recently. The change in name coincided with the change in capital in preparation for completing the $18.5 million financing program.

Several hundred thousand dollars have been spent on engineering and equipment and the potash production stage is expected to be reached in 1957.

Clifford S. Strike, president of F. H. McGraw & Co., New York, and W. F. Davey, president of Winnipeg Natural Gas Co. and Canadian Hydro Carbons, Ltd., have joined the board of directors with Mr. Strike appointed as chairman.

New financing will involve the issue of debt securities amounting to approximately $12 million and the sale of $6.5 million worth of common stock. Stockholders also agreed on a change of capital whereby one share of new stock will be issued for each five shares outstanding. The new authorized capital will be 4 million shares, no par value, with 1 million outstanding. Two million shares will be issued for $6.5 million leaving a million shares in the treasury.

MINT GROWERS TO MEET

CORVALLIS, ORE.—The seventh annual meeting of the Oregon Essential Oil Growers' League will be held Jan. 19-20, at Oregon State College. A highlight of the conference is an encouraging report on chemical weed control to reduce costly and time-consuming weeds of mint fields.

NITROGEN REPORT

(Continued from page 1)

figures for 1953-54 were 6,963,700 tons and 6,885,400 tons respectively.

F. C. O. Speyer, chairman of the federation, points out that these figures are estimates only, particularly in connection with the totals included for Eastern Germany, Russia and North Korea.

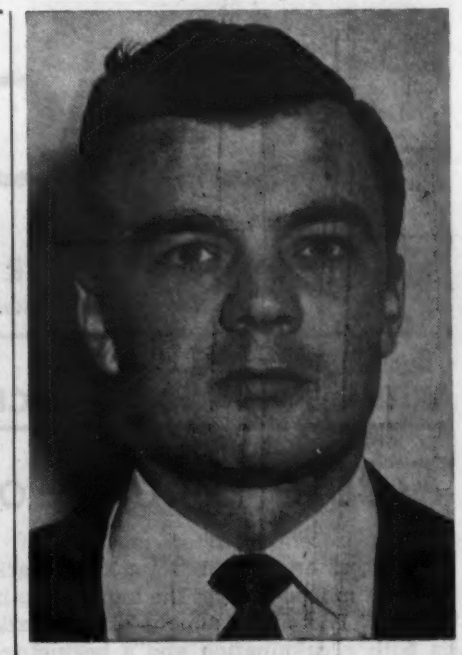
The British trade managed to increase its exports of sulfate of ammonia to 308,678 long tons in the year ended June 30, 1955, compared with 299,016 tons in the previous year. The peak sales effort was made in 1952-53 when overseas deliveries totaled 455,577 tons.

The U.S. is shown as the world's largest producer country with a total of 2,326,000 tons and a consumption figure of 2,491,400 tons. In 1953-54 the figures were 1,971,200 tons and 2,207,000 tons, respectively. The Americas, South and North, produced a total of 2,804,200 tons in 1954-55 and consumed 2,794,600 tons.

Production in Asia in the year ended June 30, 1955, was 832,000 tons against a usage of 1,185,800 tons. Africa had a production of 64,300 tons against a consumption of 222,100 tons. Oceania produced 20,800 tons and used 35,000 tons.

DELAVAN APPOINTMENT

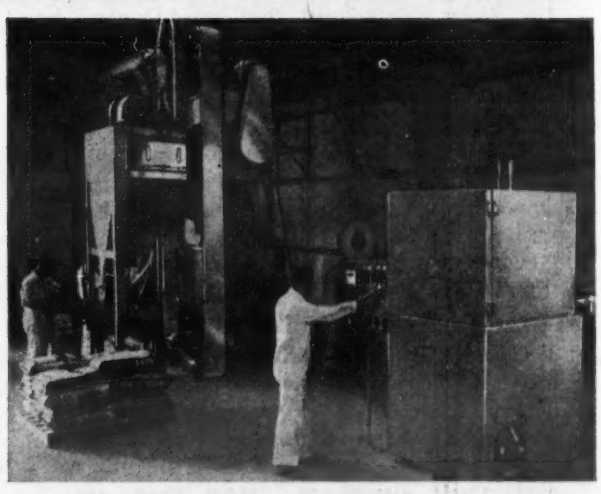
DES MOINES—The Delavan Manufacturing Co., West Des Moines, has named Kenneth B. Luskin as administrative assistant to H. F. Rothwell, vice president. Among the firm's products are agricultural sprayers.



Leon Brownfield

PRODUCTION MANAGER — Leon Brownfield has assumed his duties as fertilizer production manager for Texas Farm Products Co., Nacogdoches, Texas, manufacturer of Lone Star Brand Fertilizer, according to an announcement by Joe Wright, vice president in charge of fertilizer production. Mr. Brownfield will be production manager for both the Lone Star Phosphate Co. and Texas Farm Products Co.'s new high analysis pelleted fertilizer plant now under construction. A native of Kansas City, he formerly was plant engineer for Farm Belt Fertilizer and Chemical Co. of that city. For three years prior he had been process engineer for Phillips Petroleum Co. in their Fairfax Refinery at Kansas City.

Poulsen Insecticide Plants Increase Production for Oasis Chemical Co., Inc.



A recently installed Poulsen R.T.R. Uni-Blender insecticide compounding plant, at left, is producing Oasis Brand insecticides in Imperial, California. It is a dual unit with 40 cubic feet capacity; three to four batches per hour. At right is a Poulsen R.T.R. Uni-Blender liquid formulating system.*

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Poulsen R.T.R.* Uni-Blender plants, like the ones above, can increase per-hour production and greatly reduce hand operations and maintenance costs. Poulsen Uni-Blenders are ready to produce in these fields: compounding and liquid formulating for insecticides, chemicals, etc.; feed milling for poultry and hogs; commercial fertilizer, and compounding for soaps and detergents. Other complete plants for sulphur and inert materials, dehydration, and feed mills for cattle, are also made by Poulsen Company.

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Croplife®

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Western states.

WITH NEW NATIONAL SOCIETY—

Future Weed Control Prospects Enhanced

The recent charter meeting of the Weed Society of America in New York marked an important milepost along the highway to better weed control. The establishment of this national group is both a culmination and a beginning. Its existence results from both hard work and aspirations of many who believe in weed control as being important to American agriculture. At the same time, it represents a beginning of further thinking and cooperation on weed problems of the nation as well as a broader look at local and regional weed problems.

Dr. Byron T. Shaw, administrator, Agricultural Research Service of the U.S. Department of Agriculture addressed the new society at its charter meeting and pointed out a few matters that could well be brought before the trade in these columns.

He said that one of the most outstanding accomplishments in weed control has been the cooperation among federal, state, and private agencies, all of whom participated in the research, teaching, extension, development, and regulatory phases of weed control. Cooperation of "a high order" has been required to do the job that has been done during the past ten years with limited personnel and facilities, he observed, and added that those people in weed control are now in a better position than ever to strengthen the weed research program. "This national organization, representing all groups, will provide additional stimulus to even closer cooperation and greater service to agriculture."

Dr. Shaw pointed out that weed control has an important place in American agriculture. From an economic standpoint, he reminded that weeds are "big business." They cost American farmers some $4,000,000,000 annually, and "that's nearly equal to the value of the nation's entire corn crop," he said.

Opportunities to help farmers to reduce these losses lie in helping growers to improve their present economic position, and also in helping them to adjust their operations to meet the changes in demand for farm commodities.

The ARS administrator said that people in weed control work have a particular opportunity, since any development that will cut the costs of production without increasing the output of crops now in surplus is particularly significant. "Most likely this will be done by substituting lower cost methods or materials for those now in use. For example, if we use chemicals instead of tillage, or as a substitute for some of the tillage, we often can cut costs."

The points made by Dr. Shaw in illustrating this statement bear repeating also. He said that corn belt farmers usually cultivate three to five times a season primarily to control weeds. At $1.25 an acre per cultivation, costs thus range from $3.75 to $6.25. Tests in Ohio showed that chemicals alone could control weeds on many soils at a cost of about $3.40 an acre. Since the yields are just about the same on both cultivated and chemically weeded plots, chemical control costs less.

He declared that even better results have been obtained in experiments with cotton. "In Mississippi during the past five years, the cost of controlling weeds with chemicals has averaged about $9.00 an acre, as compared with $15.00 for conventional methods." Yet, despite these imposing figures, only a few farmers have depended exclusively on chemicals to control weeds in corn and cotton.

In the face of the experimental results that have been obtained with chemical weed control why do not more farmers use this method, he asked. The answer given by Dr. Shaw will probably ring a bell in the minds of many dealers and others who sell to farmers.

The reason for reluctance to use chemicals to a larger extent lies in the fact that the risk has not been removed in many cases. "The preliminary successes in laboratory and field trials appeal to farmers who can afford to take the risk, for example, of having to replant a crop injured by a pre-emergence chemical. But most farmers cannot afford to take the chance, although the ultimate results, if successful, may mean more profit."

If, therefore, greater assurance could be given that the use of chemicals would actually control the weeds at low cost, there would be greater and more enthusiastic acceptance on the part of farmers. This, Dr. Shaw said, can be corrected only through research. Although weed control is usually thought about in terms of crops such as corn, cotton and vegetables, Dr. Shaw mentioned also the fact that grazing land is greatly reduced in value by the presence of noxious weeds. In fact, he declared that weeds remove at least 12% of the grazing value of range lands and that they are even more costly on cultivated and permanent pastures.

Not only that, but weeds are a particularly serious handicap in successful irrigation of range and pasture lands. "Water losses due to weeds are estimated at more than $25,000,000 in the western states alone, without counting those in other areas where irrigation is on the increase.

"Millions of acres in the northeast, in the Piedmont plateau, and in the intermountain areas are unproductive because they are too stony for cultivation or too sloping to run the risk of erosion by cultivating. These pasture lands are usually overrun with weeds. Here is a case where improved technology will increase efficiency of production by increasing unit yields, because on many of these lands, weeds have not beeen controlled before."

That opportunities in research in helping to meet the need for increasing forage yields are tremendous was brought out by Dr. Shaw in his talk. "Actually this area of research has hardly been scratched," he declared. The great lack lies in the field of experimental results, plus a few practical applications to show what can be done, he added. "Chemical herbicides appear at present to be the best answer," he said.

Dr. Shaw added that chemical renovation for example could help solve the problem of poor forage production on sloping and stony pastures. "If owners of such lands could kill the present weedy growth with chemical herbicides and then re-seed them with adapted grasses, they would have a good resource for livestock production. Research results indicate that this can be done economically and efficiently," he said.

In view of all the impressive evidence that chemical weed control can bring about highly desirable results, Dr. Shaw asked the question once more, why are only two and one-half million acres of pastures and range land being sprayed for the control of weeds and brush? "Of the ninety million acres of mesquite-infested lands, it is estimated that thirty million acres would pay

(Continued on page 23)

Croplife

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CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is $5 for one year ($8 a year outside the U.S.). Single copy price, 25¢.

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MEETING MEMOS

Jan. 16-18—Southern Weed Conference, Ninth Annual Meeting, Hotel Jung, New Orleans; Dr. E. G. Rodgers, Florida Agricultural Experiment Station, Gainesville, Secretary-Treasurer.

Jan. 16-20—Minnesota Weed & Seed Inspectors Short Course, University of Minnesota, St. Paul.

Jan. 17—Georgia Plant Food Educational Society, Annual Meeting, University of Georgia, Athens, Ga., Fielding Reed, American Potash Institute, Mortgage Guarantee Bldg., Atlanta 3, Ga., secretary-treasurer.

Jan. 18—Western Oregon Fertilizer Dealer Meeting, Sponsored by the Pacific Northwest Plant Food Assn., Oregon State College, Corvallis, Ore.

Jan. 18-20 — Western Cooperative Spray Project, Imperial Hotel, Portland, Ore.

Jan. 26-27—Custom Spray Operators Training School, University of Illinois.

Jan. 26-29 — Agricultural Aircraft Assn., Inc., Sixth Annual Convention, Wilton Hotel, Long Beach, Cal.; Wanda Branstetter, Route 3, Box 1077, Sacramento, Cal., Executive Secretary.

Jan. 27 — Colorado Agricultural Chemicals Assn., Cosmopolitan Hotel, Denver.

Jan. 30 — Wisconsin Fertilizer and Lime Dealers Conference, Memorial Union, University of Wisconsin, Madison, Wis.

Jan. 30-31—National Cotton Council of America, Annual Meeting, Buena Vista Hotel, Biloxi, Miss.

Jan. 30-Feb. 3—Purdue Pest Control Operators School, Purdue University, Lafayette, Ind.

Feb. 6-8—Agronomy Section, Association of Southern Agricultural Workers, Atlanta (Ga.), Biltmore Hotel; W. E. Colwell, North Carolina State College, Secretary.

Feb. 6-8—Cotton State Branch, Entomological Society of America, Biltmore Hotel, Atlanta, Ga.; W. G. Eden, Alabama Polytechnic Institute, Auburn, Ala., secretary-treasurer.

Feb. 7-9 — National Garden Supply Trade Show, Kingsbridge Armory, New York City.

Feb. 14-16 — Agricultural Chemicals Conference, Lubbock, Texas.

Feb. 15-16—Oklahoma Plant Food Educational Society, Oklahoma A&M College, Stillwater, Okla.

Feb. 15-17—California Weed Control Conference, Sacramento and Davis, Cal.; Oliver A. Leonard, Botany Dept., University of California, Davis, Cal., secretary.

Feb. 15-17 — Western Weed Control Conference, Sacramento and Davis, Cal.; W. C. Robacker, U.S. Department of Agriculture, Nevada Agricultural Experiment Station, Reno, Nev., secretary-treasurer.

Feb. 16-17 — Middle West Soil Improvement Committee's annual joint meeting of the fertilizer industry and Universities; Edgewater Beach Hotel, Chicago.

Feb. 18-20 — Third Annual Pacific Northwest Agricultural Chemical Industry Conference, Imperial and Benson Hotels, Portland, Ore.

Feb. 20-21 — Southwestern Branch, Entomological Society of America, Hotel Texas, Fort Worth, Texas.

Feb. 22-24—Fifth Annual Ohio-Indiana Agricultural Aviation Conference, Ohio Union, Ohio State University, Columbus.

Feb. 22-24—Alabama Pest Control Conference; Alabama Polytechnic Institute, Auburn, Ala.

Feb. 22-24—Midwestern Chapter, National Shade Tree Conference; LaSalle Hotel, Chicago; Noel B. Wysong, Cook County Forest Preserve, River Forest, Ill., secretary.

Feb. 28-29—Fifth Annual Pesticide Chemicals School, Clemson House, Clemson, S.C., Dr. J. H. Cochran, Dept. of Entomology and Zoology, Clemson College, Clemson, S.C.

March 6-7—Fifth Annual Western Cotton Production Conference, Fresno Hacienda, Fresno, Cal.

March 14-18 — National Agricultural Chemicals Assn., Spring Meeting; Hollywood Beach Hotel, Hollywood, Fla.; Lea S. Hitchner, NAC executive secretary, 1145 19th St. N.W., Washington 6, D.C.

March 28-30—North Central States Branch, Entomological Society of America, Purdue University Memorial Union, Lafayette, Ind.

April 10-12—Council for Agricultural and Chemurgic Research, 21st Annual Conference; Congress Hotel, Chicago; Sec., John W. Ticknor, Council for Agricultural and Chemurgic Research, 350 Fifth Ave., New York 1, N.Y.

May 16-18—Synthetic Organic Chemical Manufacturers Assn., Annual Outing, Skytop, Pa.

June 10-13—National Plant Food Institute, Annual Convention, the Greenbrier, White Sulphur Springs, W. Va.

June 28-30—Association of Southern Feed & Fertilizer Control Officials, 14th Annual Convention, Hotel Roanoke, Roanoke, Va.; Bruce Poundstone, Kentucky Agricultural Experiment Station, Lexington, Ky., Secretary-Treasurer.

June 28-30—Seventh Regional Fertilizer Conference of the Pacific Northwest, Chinook Hotel, Yakima, Wash.

INDEX OF ADVERTISERS

Abrasion & Corrosion Engineering Co.....
Adams & Doyle, Inc. .....
Agricultural Chemicals Division, Pittsburgh Coke & Chemical Co.....
Agricultural Chemical Equipment Co.....
Allied Chemical & Dye Corp., General Chemical Division .....
Allied Chemical & Dye Corp., Nitrogen Division .....
Anco Manufacturing & Supply Co. .....
American Potash & Chemical Corp..... 19
Armour Fertilizer Works .....
Ashcraft-Wilkinson Co. .....
Atkins, Kroll & Co. 11

Bagpak Div., International Paper Co.....
Baker, H. J., & Bro. .....
Baughman, Manufacturing Co., Inc. .....
Baird, J. B., Co. .....
Bemis Bro. Bag Co. .....
Bue, John, Co. .....
Bradley & Baker .....
Burkhardt-Larsen Co. .....
Burrows Equipment Co. .....
Butler Manufacturing Co. .....

Calcium Carbonate Co. .....
California Spray-Chemical Corp. .....
Carlile, J. C., & Associates .....
Chase Bag Co. .....
Chemical Service Corp. .....
Chipman Chemical Co. .....
Clover Chemical Co. .....
College Science Publ. .....
Commercial Solvents Corp. .....

Deere & Co., Grand River Chem. Div.....
Diamond Alkali Co. .....
Diamond Black Leaf Co. .....
Dixene Agricultural Service .....
Donco, Inc. .....
Douglas Chemical Co. .....

E. I. du Pont de Nemours & Co., Inc.....
Export Chemical Corp. of Colorado.....
Fairfield Chemical Division, Food Machinery and Chemical Corp. .....
Fischbein, Dave, Co. .....
Fluor Steel Corporation .....
Foridin Company .....
Frontier Chemical Co. .....

Gandrud, E. S., Co. .....
General Chemical Division, Allied Chemical & Dye Corp. .....
Gentcher Engineering & Mfg. Co.....
Geyser Chemical Co. .....
Grand River Chemical Div., Deere & Co...

Hahn, Inc. .....
Hammond Bag & Paper Co. .....
Henderson Mfg. Co. .....
Hercules Powder Co. .....
Highway Equipment Co. .....
Hoyt, Frank H., Co. .....
Hydro Engineering, Inc. .....

International Minerals & Chemical Corp...
International Paper Co., Bagpak Div.....

Johns-Manville Corp. .....

K. H. Corporation, The .....
Kalo Chemical Corp. .....
Kaylor Chemical Corp. 7

Krause Plow Corp. .....
Kraft Bag Corp. 17

Larvacide Products, Inc. .....
Lebanon Chemical Corp. .....
Lion Oil Co., Div. Monsanto Chem. Co....
The Mackwin Co. .....

Wilson & George Meyer & Co.....
Michigan Chemical Corp. .....
Midstate Machinery Co. .....
Midwestern Spray-Chemical Co., Inc.....
Minco Products Corp. .....
Minerals & Chemical Corp. of America...
Mississippi River Chemical Co. .....
Monsanto Chemical Co. .....

Naugatuck Chemical Div., U. S. Rubber Co. 6
Nelson, Edward S., Ltd. .....
New York Hanseatic Corp. .....
Niagara Chemical Division, Food Machinery and Chemical Corp. .....
Nitrogen Div., Allied Chemical & Dye Corporation .....
Northern Chemical Industries .....

Olin Mathieson Chemical Corp., Insecticides Division .....

Pacific Coast Borax Co. 8
Pacific Plastics Co. .....
Pennsylvania Salt Mfg. Co. of Washington
Pfizer, Chas., & Co., Inc. 5
Phelps-Dodge Refining Corp. .....
Phillips Chemical Co. 20
Pittsburgh Coke & Chemical Co., Agricultural Chemicals Division .....
Potash Company of America .....
Poulsen Company 21
Powell, John, & Co., Inc. .....
Private Brands, Inc. .....

Rapids Machinery Co. .....
Residex Corp. .....
Rieke Metal Products Corp. .....
Riverdale Chemical Co. .....

Savage, K. E., Co. .....
Schrock Fertilizer Service .....
Shell Chemical Corp. .....
Smith-Rowland Co., Inc. .....
Sohio Chemical Co. .....
Specifide, Inc. .....
Spencer Chemical Co. .....
Stauffer Chemical Co. 3
Stewart-Warner Corp. .....
Stoker, H. S., Co. .....

Tennessee Corp. .....
Thompson-Hayward Chemical Co. .....

Umbaugh Agricultural Chemical Co. .....
Union Bag and Paper Corp. .....
United Petroleum Gas Co. .....
U. S. Phosphoric Products Division, Tennessee Corp. .....
U. S. Potash Co. .....
U. S. Rubber Co., Naugatuck Chem. Div.. 6
U. S. Steel Corp. .....

Velsicol Corporation .....
Virginia-Carolina Chemical Corp. .....
Vulcan Containers, Inc. .....
Vulcan Steel Container Co. .....

Woodbury Chemical Co. .....

TEXAS MEETING

(Continued from page 2)

of the School of Agriculture; Dr. G. W. Adriance, head of the horticulture department; Dr. R. D. Lewis, director of the Texas Agricultural Experiment Station; Dr. J. B. Page, head of the agronomy department; L. S. Bird of the plant physiology and pathology department; M. E. Bloodworth of the Lower Valley Experiment Station at Weslaco; A. G. Caldwell of the agronomy department; Dr. E. R. Lemon, agronomy department and USDA; Ted Trew, extension pasture specialist, and R. M. Smith, Blacklands Experiment Station, Temple.

Dr. J. F. Fudge, state chemist, department of agronomy, was chairman of the conference.

Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

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Detailed List Furnished on Request. Delivery Immediately.

Shreveport Fertilizer Works
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Shreveport, Louisiana

EDITORIAL

(Continued from page 22)

good returns from spraying. Why are the thirty million acres not being sprayed?"

Dr. Shaw declared that the answer is the same as it was for cultivated crops: that our research results are not yet convincing enough. "Our information is too fragmentary and too limited."

Further information of all types is urgently needed, as has been pointed out here before. Dr. Shaw indicated at the New York meeting that "all these problems call for more fundamental research about weeds themselves . . . about their nature, life cycle, growth habits, seeding habits, and ecology." He indicated that more information is also needed on herbicides themselves, including data about volatility of the chemical, its relationship to temperature, moisture, and light, as well as its effect on the growth of the crop and the quality of the harvested product.

Dr. Shaw also put in a plea for more attention to be given to application equipment. "The situation has improved in recent years, and research engineers are working closely with weed specialists in designing equipment to do the job more effectively."

The herbicide industry, all the way from manufacturers to dealers who sell the product to the ultimate consumer, have an interest in the ultimate solution to problems brought up by Dr. Shaw. Probably his conclusion to the talk contains a good thought for the people in the trade to reflect upon:

"The ultimate goal of all agricultural research is to help farmers produce the needed food and fiber in an efficient and profitable manner. Weed control is an integral part of this goal. The job will require the continued and strengthened cooperation and mutual confidence among research workers in Federal and State governments and private industry, as well as the general public who will be the ultimate beneficiaries of this work."

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See Page 4

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